



67 FREEWARE PLUGS, **869** SAMPLES, **2 HRS** OF TUTORIAL VIDEOS



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MusicTech

Issue 151
October 2015

The magazine for producers, engineers and recording musicians

THE FREEWARE TOP 50!

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SOFTWARE

67

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//LOGIC X
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MusicTech

Expert Panel



Studio Hardware John Pickford
John is a studio engineer with over 25 years of experience. He is a keen sound recording historian and has a passion for valve-driven analogue equipment and classic recording techniques.



Mixing/Mastering/Logic Mark Cousins
Mark specialises in sound design and cinematic productions. He has recorded with orchestras across Europe and is heavily involved in soundtrack composition.



Careers Editor Rob Boffard
Rob Boffard is a sound designer with a background in TV and radio work. He is a Reason evangelist, and when not writing for *MusicTech* he releases hip-hop music under the name Rob One.



Digital/Composition Andy Price
With a Master's in songwriting and a vast interest in music history and recording techniques, Andy works daily on *MusicTech.net* as well as regularly contributing to the magazine. He is currently heading up our Landmark Album features and songwriting/Cubase series.



Recording & Guitar Tech Huw Price
A recording engineer since 1987, Huw has worked with David Bowie, My Bloody Valentine, Primal Scream, Depeche Mode, Nick Cave, Heidi Berry, Fad Gadget and countless others.



Scoring/Orchestral Keith Gemmell
Keith specialises in areas where traditional music-making meets music technology, including orchestral and jazz sample libraries, acoustic virtual instruments and notation software.



Ableton Live Martin Delaney
Martin was one of the first UK Ableton Certified Trainers. He has taught everyone from musicians to psychiatric patients and has written three books about Live. Martin also designed the Kenton Killamix Mini USB MIDI controller and is now the editor of www.ableton-live-expert.com.



Reason, DJ & Mobile Hollin Jones
As well as teaching music technology, producing and writing soundtracks, Hollin is an expert on everything Apple, mobile or computer-related, as well as being an accomplished keyboard player.



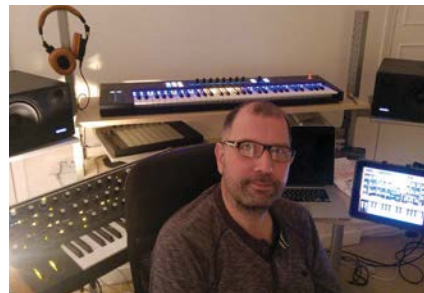
Electronic Music Alex Holmes
Alex has been a computer musician for 15 years, having a keen passion for beats, bass and all forms of electronic music. He's currently involved in three different dance music projects.



Pro Tools Mike Hillier
Mike spent five years at Metropolis Studios, working alongside some of the best-known mix and mastering engineers in the world. He is now building his own studio in south London.

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Much as I like to fill my studio with endless bits of must-have hardware (as, it seems, you do, judging by the incredible Show Off Your Studio responses that continue to flood the *MusicTech* offices), I am only too

aware that at the other end of the scale the freeware scene continues to roll onwards, offering a limitless virtual world of studio software for absolutely zero cash in return...

And I'm also only too aware that there are obviously a huge number of people using freeware to either trial paid-for versions of software or to create masterpieces with. BUT, like the incredible amount of free *music* that is now out there, wading through free software to find out the choice titles can be a nightmare – one of constant installs and sullyng of your hard drive to end up with the best selection. Fortunately for you, a couple of men named Jones – Hollin and I – have dirtied our drives by sorting out the best freeware for you, something which looks like becoming a yearly trawl for us. Hollin, in particular, is now a gibbering wreck of a Jones, having performed the bulk of the task (I stuck to the synths, as usual). We found so many good ones between us that we've ended up with far more than the planned and 'advertised-this-issue' 50 (see p12), so will bring you the bonus 20 or so extra ones next month. But be assured that the 50 you hold in this issue are our definitive list of 2015 and many are on the DVD, so you can make music for free straightaway. Or paid-for music with free software – you know what I mean...

On another note, and rather under the radar, we've introduced *MusicTech* hands-on videos this month – Mike Hillier kicks off a rather great mastering series on p52, and in video form on the DVD. Expect to hear my more nasal tones soon. Until next issue, have a productive production month...

Andy Jones Senior Editor

Email andy.jones@anthem-publishing.com

Twitter @AndyJonesMT



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MT Contents

Issue 151  October 2015

FREE SAMPLES
GO HERE P114

FREEWARE
TOP 50 P12

67 FREE PLUG-INS
FREEWARE SPECIAL P114



MT Cover feature



12 TOP 50 FREE PLUG-INS!

We reveal the best synths, effects, DAWs and instruments. PLUS make complete tracks today with 67 free plug-ins on the DVD!



30 Bulletdodge Records

Talking techno and Live, live...

MT Buyer's Guide



105 Six of the best... classics

The best hardware emulations of classic gear...



p62

p79

p88

p83

The latest reviews

YAMAHA REFACE

Plus reviews of NI, Sonokinetic, Adam, Output, iZotope and many more...

DAW workshops

38 Logic Pro In Depth

Creative effects routing

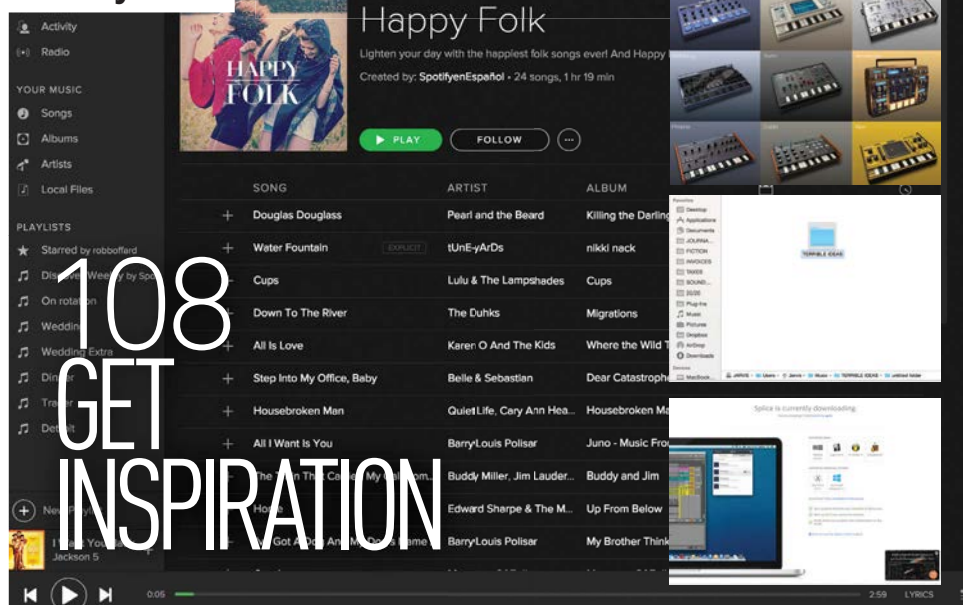
42 Ultimate Guide To Live

Creating arrangements

52 Mastering Part 1

A new series on getting a pro sound

6 Ways to...



108 GET INSPIRATION

MT Issue 151 Full listings...

ADVANCE

007 | *Industry news and opinion*

ULTIMATE FREEWARE 2015

012 | *The best 50 freeware plug-ins*

We reveal the best free synth, DAW and effect plug-ins...

INTERVIEW

030 | *Talking Techno: Bulletdodge Records and their Live set-up*

TECHNIQUE

038 | *Logic In Depth Part 4*

Creative FX routing

042 | *The Ultimate Guide to Live 8*

Building arrangements in Live

048 | *20 Tips on... EQ*

052 | *New Series: Mastering Part 1*

Wrangling with frequencies

056 | *Beat programming & sound design*

Working with REX files

SUBSCRIBE

060 | ...and get a huge discount!

REVIEWS

062 | *Yamaha reface* Four new keyboards with retro appeal, one massive, in-depth review!

074 | *iConnectivity iCA4+* interface

077 | *Sonokinetic Tutti Vox* choir

079 | *Output Signal* instrument

083 | *iZotope RX Final Mix* hi-end production software

085 | *dbx 676* channel strip

088 | *Adam S3X-H* monitors

092 | *NI Traktor Kontrol D2* DJ controller

095 | *Vir2 Apollo Cinematic* Guitars guitar software

096 | *DigiGrid iOS* interface

098 | *Nord Stage 2 EX HP76* high-end piano, organ and synth

101 | *Mini Reviews*

REGULAR FEATURES

105 | *6 of the best...* hardware emulations of classic gear

108 | *New Series: 6 ways to...* get inspiration

110 | *Show off your studio* a look at your incredible set-ups

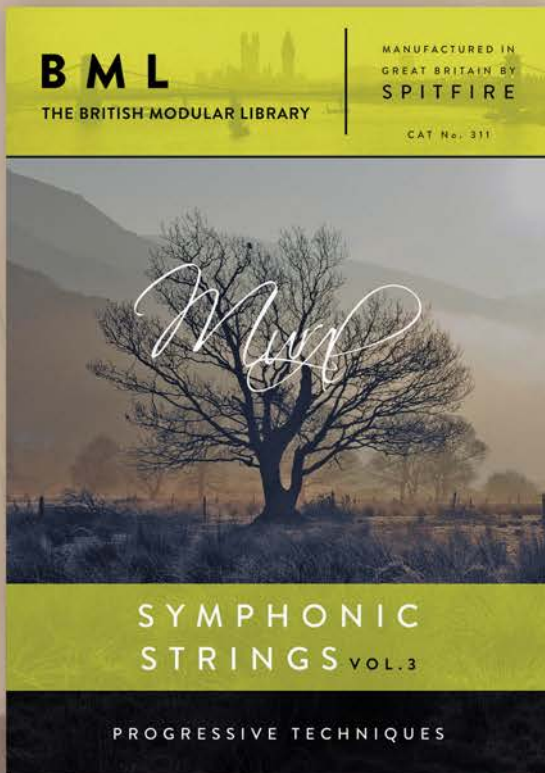
112 | *Next month in MusicTech*

114 | *On your MT DVD* 67 free plug-ins



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MT Studio

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STUDIO TIME TRAVEL. WITH DOGS.

We've had such an amazing response to our Show Off Your Studio feature – see pages 110 and 111 – that we've decided to highlight one incredible workspace each issue. We're kicking things off with **Bert Ram's** amazing time-travelling set-up – **with a dog** – to show what difference three decades makes...

Our Show Off Your Studio feature has certainly set the internet alight, with great pictures of amazing studios and lots of discussion to go with them. So successful has it been that we're going to extend the amount of space we give to it, and also highlight one amazing workspace each month in this new Studio section. To start off, we've probably the most incredible studio ever, in that not only do we have shots of the great current set-up, but also the owner's studio from 30 years ago, and so good is the 1980s shot that some people on the *MusicTech* Facebook page didn't believe it was that old!

Bert Ram is the studio's owner, and we'll let him explain...

"I started my music career in the beginning of the 80s. Right at the beginning, my aim was to work in my own studio, and later this vision came true, as in the 80s I made demos in my own workspace. In 1989, I got my first record contract with Warner Germany, and my artist name was Roman (roman-artist.com). The first album, Blue Moonbeam, was recorded in Hamburg and I prepared all of the tracks in my own studio. My equipment in those days was an SCI Prophet 2002; Yamaha DX7; Roland Juno-60 and D-50; a Tascam 8-track tape machine; my accordions, AKG C414 and Shure SM58 mics;

and last but not least: all the musicians – Cornelius Borgolte, Olaf Scherf, Pino Palladino and Simon Phillips.)"

So that explains the 80s set-up and photograph, but now it's time to get right up to date with Bert's studio. He had a successful career back in the late 80s and 90s, and has been just as successful penning music for the likes of Daimler Benz, Volkswagen and BMW. He fills in the story...

"In 2008, the quality of mixing in the box was still dubious, so I bought a Neve console 5088, serial number 3 – a great sound with a warm character. But after a few years, I missed the total recall I had with various generations of Macs, and decided that I could work without a console – no problem, as long as you have analogue stuff to record properly. I sold the console and now I am a completely in the box and it's perfect. I have a Mac running Logic X, and a friend (Marc Schlaile) gives me great advice on new technology, so today I love plugins but I have not forgotten to experiment with my Urei 1178, some Neve, Focusrite and API preamps and compressors and – of course – my old analogue instruments, like my Fender Rhodes, the Wurlitzer, the Minimoog or even my Crumar DS-2."

We'll have the full interview with Bert in two issue's time. →

Bert at work in his studio in the 1980s (left) and today (dog not pictured)



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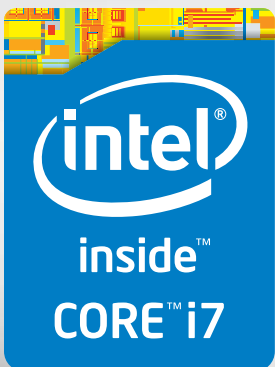
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→ APPLE'S FREE SYNTH IT'S A KIND OF MAGIC

In case you missed our exclusive hands-on look at Logic 10.2, here's a 'best of'. Essentially, Apple is giving away a **free synth** – and a damn good one at that – to all registered Logic owners...

Apple likes to drop updates to Logic on us without warning, but at least they are usually significant ones. So v10.2 might seem like only a small update, but there's magic in that there decimal point.

Logic 10.2 is available now and free to registered users. While the ability to upload your tracks to Apple Music Connect (account needed) was expected, and the additional Apple Loops (1000), update to Mainstage (3.2) and Force Trackpad additions are welcome, it's Alchemy that will tempt people to upgrade or even crossgrade. Alchemy is a huge sample manipulation synth with multiple engines, 3,000 presets, multiple effects, arpeggiator and advanced morphing features. It's a not totally-unexpected update to a synth originally made by Camel Audio, a company acquired by Apple at the start of the year. But this is a much-updated Alchemy, and it is cleaner, bigger and very much fits into the Pro X environment.

It has several synth engines: additive, spectral, granular synthesis and resynthesis, sampling and virtual analogue, and allows you to import samples and manipulate them with these engines, or create your own instruments as you would in a sampler, as there are facilities to map, loop and group. There are even some on the MT team who wish this could be the replacement for the EXS24 sampler we've been waiting for (MT Logic expert Alex Holmes says: "It does everything that EXS does and more, with better filters, envelopes, etc. But it might be overkill for certain tasks (arguably a bit like how Ableton has got Simpler and Sampler)."

Sources times four

Each sound within Alchemy uses up to four 'sources', utilising one or more of those engines. These are all-important, as it's what you can do with them and how they interact that sets

Alchemy is a free synth that gives users of other DAWs a compelling reason to give Logic a try

Alchemy apart. Mix them, morph them, modulate them, add effects or arpeggiate each. The Alchemy signal flow takes each of your four sources through three filters (in series or parallel), and the sources are then combined to go through (or bypass) a further two filters to an effects section.

You can switch to one of three main UI views. 'Advanced' has options A, B, C or D for more detail on each of your sound sources. Switch to the Sampler tab and you can start the important business of importing your audio. Within the Global tab, you are in a mixer area, where you can blend the sources together. The main effects area is at the bottom of the GUI. The modulation section is as fully featured as you could ask for, with plentiful sources and destinations.

Other options in Alchemy include an arpeggiator, offering easy access to patterns aplenty and hands-on access to parameters including Swing, Octaves, Rate and Latch, and there's a Perform tab with eight quick variations of the selected sound. Alchemy very much follows the 'one synth fits all' philosophy of recent releases such as Blue II. You get just about every preset you could want within just about every electronic genre, and one listen to the demos might make you feel this is the only synth you'll need for electronic music. There's movement, lots of bass, soundscapes and textures. There are 300 Logic patches and more than 3,000 presets, and an optional 14GB download.

Alchemy will bring much needed audio power to EXS users – they will be pleased that it allows EXS instruments to be loaded in, so all of Alchemy's processing can be brought to the EXS party. Original Alchemy fans will love that it still exists and has compatibility with their creations.

With the entire Logic package costing £140, less than Alchemy on its own, maybe that raises the rather unusual prospect of some of the Logic haters out there buying the software just for Alchemy, and using it almost like a separate synth alongside another DAW. Either way, if you are a registered Logic user, Apple is giving you Alchemy for free, so download it now. If you're a user of any other DAW, Apple just gave you another magical reason to give it a go, even if it's mainly just for a bloody great synth. **MT**



**THE POWER
OF MUSIC!**



MT Cover Feature

THE TOP 50 FREEWARE PLUG-INS

Fancy making music for nothing? For no outlay whatsoever? It's time for *MusicTech* to round up the best freeware out there in all sorts of music-making categories, so sit back and enjoy the best free software available. We also have 67 full and free plug-ins on this month's DVD...

In what looks set to become an annual event here at *MusicTech*, we have decided to round up the best freeware out there, in all of the main music-making categories.

In case you are unfamiliar with the freeware scene, it is a thriving community of small developers – single programmers showing off a huge range of skills and software – or larger players keen to show off their paid-for software by way of free versions.

Anyone can get involved in freeware production, hence the wide range and massive number of developers currently producing everything from simple effects to full-on sequencers. Thanks to

software such as SynthEdit, freeware can be built without a huge in-depth knowledge of the ones and zeros of complex code programming – although that does help.

We've looked at instruments, both real and synthetic; effects (creative, mixing and mastering); plus guitar and DAW options.

We've also tried to include Mac and PC versions wherever possible, although the nature of the development means that there are more Windows options out there. For free apps, check out our mobile round-up online at www.musictech.net. So, keep your money to yourself, and make music for nowt... →



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FREWARE Synths

Most freeware synths, it has to be said, follow the virtual analogue model, but we've tried to select as many different Mac and PC ones as possible...



ANGULAR MOMENTUM FREEHAND Wavetable synth

One of the few great freeware synths that isn't another virtual analogue, so it's well worth including just on that score. Freehand allows you to draw your own waveforms, and adds FM synthesis and sequencers to give the synth a unique character. It is an advert for a bigger, more fully-featured version, but that costs only \$10, and does give you a stack more presets (300 in total, while the free version has 100) and 32 notes of polyphony. If you want something a little different from your average VA, then look no further...

W: www.amvst.com/freehand

Platform: PC



GREEN OAK CRYSTAL Semi modular synth

Crystal is still surprisingly all present and correct, and still going strong in the all-new Logic 10.2, after what seems like forever on both Mac and PC platforms. It's a semi-modular synth with both subtractive and FM synthesis. You build, or indeed breed, sounds using parent waveshapes from categories such as Vintage, Atmospheres and Temp Sync'd, and the results stand up pretty well. OK, the GUI isn't that pretty, but she ain't bad for an old 'un, and there's certainly enough control and options to wrestle some decent sounds out of it, with abundant modulation control and more than 90 parameters. Also available for iOS for \$4.99.

W: www.greenoak.com

Platform: Mac, PC



HG FORTUNE ALIEN SPACE WEAVER Space synth

To be honest, there are so many synths on this developer's site that took our fancy – we seem to have the same penchant for sci-fi – that we could have been here all day recommending them. But one that seems to sum up HG more than anything else is this, Alien Space Weaver, as it combines synths with sci-fi. Not surprisingly, it excels at deep and dark atmospheres, soundscapes and effects. It has two PCM wave oscillators, one of which has 75 samples created especially for it. Other features include a couple of filters, bass enhancers, effects (including pan and delay) and five lazy buttons – which we like particularly for easy editing.

W: <https://archive.org/details/HGFortuneNFGPL>

Platform: PC



LINPLUG FREE ALPHA Virtual analogue

LinPlug is one of the best plug-in developers out there, with big-name users including Paul Hartnoll, Pet Shop Boys, Vince Clarke and Boris Blank. The company also makes MT favourite Spectral, but this is a cut-down version of its Alpha synthesiser, which has been around for a while but is still a good VA synth capable of great sonic results, down largely to an architecture that comprises dual-waveform oscillators, a multimode filter and a great modulation matrix. The free version is fully functional, but ships with only a few presets. It's still a worthy download, even after 15 years of doing the rounds.

W: <http://www.linplug.com/alpha.html>

Platform: Mac, PC



SOLCITO MUSICA SUPERTRON Virtual analogue

This is one of the best-looking free synths, and features a step modulator that makes it one of the most distinctive sounding. It generates sequences, that SM says are "typical of the 70s and 80s, dance, trance, percussion, analogue strings and other retro sounds". The feature includes scenes, which also act as presets, giving SuperTron a lot more movement and character. It has two oscillators, two envelope generators, two filters, one LFO and reverb, chorus/flanger, delay, echo and distortion. The interface makes programming easy, and there's an optional sound pack.

W: <http://solcitomusica.blogspot.com.ar/p/virtuales.html>

Price £13.99

Platform: PC



STEINBERG MODEL-E Classic virtual analogue

One of the first VST instruments released, Model-E is a classic soft synth in its own right, and four years ago Steinberg decided to release it for free. You can still download it, and the last still unsupported versions came out in 2011, so could well run on the latest systems. You get a quality synth with three oscillators and a noise generator, two envelope generators, a couple of filters, a stereo spread and a not inconsiderable 64 voices of polyphony, eight outputs and 128 memories. All things considered, it's not totally unlike a MiniMoog in nature...

W: www.steinberg.net/en/support/unsupported_products/vst_classics_vol_1.html

Platform: Mac, PC



SYNTH1 Virtual Nord Lead

Synth1 is a freeware synth classic, and has managed to survive and jump from system to system. It's worth including on any best-of list, as it stands up sonically. Synth1 is modelled on a Nord Lead 2, one of the best hardware modelling synths. It's not red nor pretty like a Nord, but has 128 presets, derived from a two-oscillator, FM and ring modulation engine with four types of filters, distortion, two LFOs, arpeggiator and 16 notes of polyphony.

W: www.geocities.jp/daichi1969/softsynth

Platform: Mac, PC



TAL SOFTWARE ELEK7RO Virtual analogue

TAL's Bass line was one of the best, emulating the Roland SH-101. Elek7ro is just as simple, and also available for Mac and PC – the former only 32-bit, but it stands up well against some of the big boys. It snarls, squelches and burps – with two main oscillators and a sub giving extra growl – and is well worth racking up with some of the more atmospheric offerings here.

W: <http://tal-software.com/products/tal-elek7ro>

Platform: Mac/PC



TUBE OHM ALPHA-RAY 4FREE Virtual analogue

This 10-voice VA synth is typical of some of the more recent hardware synth releases. With two oscillators, a sub and overdrive, you can get analogue bite and distortion, but it can be mellow too. It has a great look and atmospheric sounds. There are plenty of controls and features, with optional effects (for €4.95). We like the drab Olive look and there's a fantastic manual, full of all the tech specs and graphs.

W: <http://www.tubeohm.com/TubeOhm/ALPHA-RAY-PIC.html>

Platform: PC

'SEEING RED'

When we see red we are far from angry.

In fact we are over the moon with both

The Phoenix HG15 and The Culture Vulture *super 15* receiving awards. We must be doing something right!



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2014

THE PHOENIX HG15



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→ **FREEWARE** Synths continued...



**U-HE
ZEBRALETTE**
Virtual
analogue
synth

Some freeware is clearly designed to plug the paid-for version, and some does that but is usable in its own right; this fits that category. U-he admits that "the idea is to use Zebralette to demonstrate the virtues of Zebra2's oscillators to everybody out there, and perhaps even convince some of them that upgrading to Zebra2 might be a good idea," but in producing Zebralette, the company has delivered a charming plug-in that has lots to admire. On top of that single oscillator are two LFOs, a multi-stage envelope and three onboard effects (chorus, EQ and delay). Some really great sounds can be produced, simple as that!

W: www.u-he.com/cms/zebralette
Platform: Mac, PC



**VOLT
KITCHEN
ARPPE
2600**
Classic
virtual
analogue

We guess that giving away what some of these freeware synths are supposed to be emulating will spoil some of the fun, but you couldn't get much more obvious with both the name and the look of this release. It's one of the most fully-featured freeware titles we have included, with PWM, sample and hold, virtual spring reverb, ring modulation, a noise generator, FM, oscillator sync and low- and high-pass filter types all present. There are 12 patchable routings and 80 presets. If you want something to arp on about, for free, this is it.

W: <http://glenstegner.com/softsynths.html>
Platform: PC



**WOLLO
DRONE**
Virtual
analogue
synth

This has been one of the top-rated synths with our friends over at Plug-in Boutique for quite a while now, and on download it's easy to see and hear why. It has a cool blue fascia and is based on a classic Juno synth, with a few extras besides. Wollo Drone certainly has a great analogue sound, especially when you add in a Moog filter and lots of classic features. There are 32 voices of polyphony, allowing two oscillators per voice for a truly fat sound. Other features include five oscillator waveforms with pulse-width and sync, four resonant filters, LFOs with eight waveforms and effects...

W: www.wollo.com/vst.htm
Platform: PC

FREEWARE Drums & drum machines

Get your beats for free with our round-up of the best...



CUBIX
Drum synth
and sample
player

Psychic
Modulation makes
a selection of
freeware VST
instruments for

Windows, that are more fully featured than you might expect. Cubix is a drum synthesiser and sample player with an onboard arpeggiated bass synth. Onboard crossfade sequencers let you blend between the drum sections for easy live performance, and there's randomisation and the ability to mix, match and manipulate beats. Having an integrated bass synth and being able to use sampled or synthesised drum parts makes this a clever little box for building electronic sequences.

W: <http://www.psychicmodulation.com/plugins.html>
Platform: PC



**HAHAA
DS-01**
Drum
machine and
synthesiser

Electronic drum machines were always more flexible than sample-based ones because their sounds were generated using synthesis rather than sampling, and therefore much more open to manipulation. The curiously-named 'hahaha DS-01' isn't particularly hilarious, but it is a straightforward drum synth that the developer claims "would have existed in 1983" if it had been a real product. The look is sparse, and you get eight synth sections, one for each drum type, from kick and snare to hi-hats and toms. The results are as you would expect: thoroughly 80s. Each sound can be extensively tweaked and has panning and volume controls.

W: <http://www.pethu.se/music/instruments.html>
Platform: Mac, PC



TS-808
Emulation
of Roland
TR-808

Roland's classic TR-808 has been emulated a lot, but if you can find a free version, so much the better. This Windows-only instrument takes original samples, analyses them and matches their waveforms as closely as possible to the real thing. As you might expect, the voices have more tweakability than those on the original hardware, but it's still pretty simple to use. Controls vary a little, depending on the channel, but most have tuning, tone and decay knobs as well as velocity, level, pan and selectable output. There are 15 channels available and you can create cool-sounding retro drum patterns with it. It's simple to use and rather easier than trying to track down a real 808.

W: <http://tactilesounds.blogspot.co.uk>
Platform: PC

FREEWARE Drums & drum machines continued...**MINISPILLAGE**
Drum synth
module

There are fewer
freebies on the Mac

platform than Windows, but they tend to be pretty good. Minispillage comes from developer Audiospillage, and is a free, pro-quality drum synth plug-in with 64-bit DSP processing. It features three fully editable drum pads that can create a range of drum and percussion sounds: Bass Drum, Wood Drum and Electro Hi-Hat. The Bass Drum module uses a single oscillator with pitch sweep, internal FM and harmonic controls. The Wood Drum synthesises natural and synthetic timbres from log drums to toms, and the Hi Hat module is a six-oscillator closed and open hat generator with noise source and dual resonant filters. It's more advanced than you might expect. W: <http://www.audiospillage.com/minispillage.html>
Platform: Mac AU

**DSK**
SYNTHDRUMS
Drum synth

Synth drum kits form
the basis of many

kinds of music, and DSK SynthDrums is a quick way to bring them into your projects for free. It can store 12 patches and has a system for easily assigning sounds to the keyboard. There's selectable output and MIDI automation support inside your DAW, plus multiple effects, including filters, stutter, distortion and EQ. Each of the sounds can be controlled using the extensive synthesis sections, and patches can be copied and pasted, saved and loaded using the utility section at the top. By tweaking pitch and other characteristics, it's easy to create some authentic-sounding electronic drum parts in just a few minutes.

W: <http://www.dskmusic.com/dsk-synthdrums>
Platform: PC

**TERAGON**
AUDIO
KICKMAKER
Dedicated
kick drum
synth

Some drum instruments are dedicated to making a single kind of drum sound. In EDM, kick sounds are very important, and Teragon Audio's KickMaker is designed for creating kick drum sounds. It has four independent oscillators and a variety of effects. Each oscillator has its own ADSR curve for shaping the sound, and there's a further ADSR section for the summed output of the oscillators. You load this instrument onto its own MIDI track and program the kick parts separately from your other beats, or use it to bolster existing drum parts by introducing heavier kick parts underneath existing patterns.

W: <http://teragonaudio.com/KickMaker.html>
Platform: Mac

REDD.47

MIC AMPLIFIER



→ **FREWARE** Creative effects

Freeware effects that you use for more creative purposes when mixing your music...



**A1 AUDIO
A1TRIGGERGATE**
Sequenced
rhythmic gate
processor

Disillusioned with a lack of suitable plug-ins, developer Alex Hilton started to build his own. A1 TriggerGate is a rhythmic gate audio processor that can be used to get the popular effects heard in dubstep, house and other electronic music. There's a variable onboard step sequencer, where each beat consists of four steps, or three in triplet mode, and each step has a volume fader. There are integrated effects, too: low-pass filter, drive/distortion and echo/delay to keep things interesting. These don't have tons of controls, but sound great. Although highly programmable, the effect also has a randomiser for punching in new settings instantly.

W: www.alexhilton.net

Platform: Mac, PC



**SINEVIBES
ZAP**
Audio-
controlled
synthesiser

This unusual plug-in for the Mac is a mini synth that is controlled by audio that you route into it. Beginning with an envelope follower that tracks the peaks of the signal, it applies this to the frequency of a monophonic oscillator. There are three oscillator waveform modes (pure sine, ring mod sine and phase mod sine), and Zap turns any sound source into dynamically generated busses, bleeps, blips, sweeps or glitches. In a similar way that VJ software makes graphics respond to the characteristics of incoming audio, so Zap does it with synthesised sound. It's a quick way to beef up beats with auto-generated synth elements.

W: www.sinevib.es/zap/

Platform: Mac



**ACON
DIGITAL
MULTIPLY
Phase
randomising
chorus**

This chorus effect has a phase randomising filter that avoids unwanted comb filter effects. The plug-in can simulate up to six additional voices, and the pitch and loudness can be tweaked. You also get an EQ and a pre-delay section. There's good workflow, and you get undo and redo capabilities, A/B of setups and a preset manager. It comes in VST or AAX formats for Windows and VST, AAX or AU on the Mac, in 32- or 64-bit versions, with support for 96kHz sample rates and mono or stereo processing. Audio examples are available on the website.

W: <http://acondigital.com/products/multiply/TubeOhm/ALPHA-RAY-PIC.html>

Platform: Mac, PC



**SINEVIBES
ATOM**
Tempo-
sync'd
modulating
filter

Atom is a filter, but one focused on dynamic, tempo-sync'd modulation. With five different resonant filter types, each with three slope settings, you also get two modulators with multiple waveforms that run at rates from 1/128 note to 16 bars. There's a chaos function that randomises the amplitude of each modulator cycle and a lag switch to smooth out the waveform curves. It also has an unusual interface, with simple graphics, rather than the kind of GUI you might be used to. With an advanced transport sync algorithm and support for tempo and time signature automation, it's a great way to get rhythmic filtering into your music.

W: www.sinevib.es/atom/

Platform: iOS



**TAL
CHORUS LX**
Juno-60
chorus
module

This is about as simple as effects get, but still sounds great. Taken from the chorus section of a larger virtual instrument, it has the characteristics of the chorus section of the classic Roland Juno 60 synth. With two different modes, you also get a dry/wet control, a volume knob and a stereo width control to change the amount of separation the effect introduces. AAX format is supported on Mac and Windows, as well as VST on both and AU on the Mac. Chorus isn't just the cheesy effect heard on synths in the 70s and 80s, but can also subtly add warmth and colouration to everything from drums to vocals.

W: <http://tal-software.com/products/tal-chorus-lx>

Platform: Mac, PC



**CAMEL AUDIO
CAMELCRUSHER**
Colouring
multi-effect

Although Camel Audio has been bought by Apple, some of its free plug-ins are still available to download online. CamelCrusher takes some of the processing technology from the company's other multi-effects and puts it into a simple free effect. You get two distortion types: a warm, analogue modeled resonant low-pass filter, a very easy to use compressor with a 'phat' mode and a MIDI learn function, as well as a bunch of presets and a randomiser for instant inspiration. CamelCrusher is perfect for fattening up drums, vocals, synths and practically anything else, with its distinctive beefy sound.

W: www.audiopluginsforfree.com/camelcrusher

Platform: Mac, PC

MAKE GREAT MUSIC

KRK Systems is one of the world's most respected manufacturers of Studio Monitors. In our California state of the art design facility, KRK engineers create products that deliver a natural and balanced spectral response with low distortion, tight bass and superior imaging. With KRK monitors, subwoofers and headphones, recording engineers and artists hear every nuance of the audio being reproduced regardless of musical style, genre, or particular mixing needs. Please take a closer look at KRK's line, used by many Gold, Platinum or Grammy award winning producers for tooling and crafting their great music.



VXT-Series



ROKIT-Series



KNS-Series



Subwoofers

KRK monitors are legendary for their honest voicing, accuracy and transparency. Looking for a studio reference monitor that you can trust your music to? Isn't it time you listened to a legend?



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www.krksys.com



→ **FREWARE** Mixing Effects

These will affect your mix rather than your sound – ideal for balancing levels – and all free...



**TDR
KOTELNIKOV
Dynamics
processor**

TDR Kotelnikov is a wideband dynamics processor, combining high-fidelity dynamic range control with musical flexibility. As a descendant of the TDR Feedback Compressor product family, Kotelnikov has inherited several unique features, such as a proven control scheme, individual release control for peak and RMS content, an intuitive user interface and powerful, state-of-the-art, high-precision algorithms. With 64-bit floating point processing, it offers a fast, natural-sounding compression, a sidechain high-pass filter and advanced stereo linking options for the stereo bus. It's simple to use, yet also powerful and has won acclaim for its great sound and clever interface.

W: www.tokyodawn.net/tdr-kotelnikov

Platform: Mac, PC



**LKJB
LUFTIKUS
Analogue
EQ module**

It's not entirely clear how to pronounce it, but Luftikus is a digital adaptation of an analogue EQ with fixed half-octave bands and additional high-frequency boost. It has bands at 10, 40, 160 and 640Hz, as well as a 2.5k shelf and mastering and analogue modes, depending on how you are using it. As an addition to the hardware, it allows deeper cuts and supports a keep-gain mode to avoid dramatic changes to overall gain while you are changing EQ settings. Sometimes, you want your EQs to be simple, and that's what you get here. Nevertheless, it sounds great and can be a nice alternative to your bundled EQs that may have come with your DAW.

W: www.kvraudio.com/product/luftikus-by-lkjbinstruments.html

Platform: Mac, PC



**FLUX
BITTERSWEET
3
Audio transient
manager**

Flux makes some pretty nifty apps, and also gives away a couple for free. BitterSweet 3 is a transient designer that can help to tame the transients in your audio material. Simply turn the large dial in the centre to either decrease or amplify the transients in the signal. Transient shaping is used to add attack to sounds; or when used in the opposite manner, to smooth them out and deaden the sound a little. It's particularly handy for drums and emphasising or softening hi-hat cymbal parts, depending on what is required. Like all of Flux's plug-ins, you get 64-bit support and up to eight channels of audio at 384kHz.

W: www.fluxhome.com/products/freewares/bittersweet-v3

Platform: Mac, PC



**MIDI FX
FREEZE
MIDI effect
converter**

MIDI modifiers are particularly useful when programming. Things such as chorders, arpeggiators and other tools that interpret your input to create more complex parts are all cool. But they remain virtual until you render them to audio, where you lose editability. This plug-in does it differently, by turning live-generated MIDI parts into editable regions on a MIDI track. From there, you can work with the parts directly, since they are no longer virtual. You insert the plug-in at the end of the MIDI effects plug-in chain and then use it to 'freeze' the MIDI part, whereupon it is rendered down to a MIDI event on the target track. If you work with arpeggiators and the like a lot, it's a lifesaver.

W: www.audiocr.com/midi-fx-freeze

Platform: Mac



**MINIMAL
SYSTEM
INSTRUMENTS
FILTER BANK
Multimode filter**

Filter Bank is a fantastic multimode filter for both producers and DJs. Combining five different filter types and LFOs with pure analogue-modelled dirt, this filter brings a cool-sounding effect to your productions. You get low and high pass, band pass, notch and peaking filters and an analogue knob, as well as LFOs and in and out controls. The developer also claims very low CPU usage, which is a bonus, and although it's a 32-bit effect it should also work on 64-bit systems that use a bridge for backwards compatibility. A good trick is to automate the filters using your DAW or DJ software, perhaps while linked to a hardware controller, to create more organic filter movements.

W: <http://minimalsystem.com>

Platform: Mac, PC



**VOXENGO
STEREO
TOUCH Mid/
side stereo
enhancer**

Stereo width can be an issue with some recordings. This effect transforms a monophonic track into a wider stereophonic track by using mid/side coding to alter it. It takes the mono signal and uses it to generate a stereo output signal, even supporting multichannel input and routing that to stereo too. It's designed to work on mono sounds without very sharp transients, such as acoustic and overdriven guitars, synthetic pad sounds and vocals. The idea is you can take flat-sounding mono sources and widen them out without having to use a double-track recording technique. Try it on mono mic'd guitars and vocals.

W: www.voxengo.com/product/stereotouch

Platform: Mac, PC

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analogueDESIGNdigitalPOWER

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CARL COX

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→ **FREWARE** Mastering effects

A round-up of free plug-ins used to make your mixes sound professional...



A1STEREO CONTROL

Stereo expansion and control processor

Stereo expansion is often used in moderation during the mastering stage, though it can also be employed on individual tracks when mixing. The idea is to give your tracks more width and make them sound more expansive. One problem can be widening the bass end, as bass should remain centred to retain focus and power. The A1StereoControl has a solution for this in the Safe Bass algorithm, that centres all bass signal below a user-configurable threshold. Different pan laws and curves are supported, as well as a classic 'balance' mode and dual panning. Use it to add scope to your mixes and masters.
W: www.alexhilton.net/A1AUDIO/index.php/a1stereocontrol
Platform: Mac, PC



KLANGHELM IVGI

Saturation and distortion processor

One of the perils of producing music in the digital domain is everything can sound too clean and clinical. The imperfections that came with recording to tape were often what gave the sound character. Some people try to reintroduce this warmth by adding saturation at the mixing or mastering stage. IVGI reacts dynamically to the input signal and can produce subtle saturation when applied to a master signal. It can also be used to distort tracks. The Controlled Randomness feature introduces drift and variance, and lets you alter the frequency dependency of the saturation with the response control.
W: <http://www.klanghelm.com/IVGI.php>
Platform: Mac, PC



LVC AUDIO CLIPSHIFTER 2

Waveshaping audio plug-in

ClipShifter is a waveshaping audio plugin that functions like a clipping-style limiter, and can be used at all mixing stages, from distorting basses and drums to maximising mix buses and warming up mixes. The sonic characteristics of the clipping distortion can go from hard, brickwall-style clipping to softer saturation with compression. It can be used in static or dynamic mode, and there's an independent left/right or mid/side threshold control, as well as the ability to change the clip shape and adjust the harmonic content. This functionality is free, though there's the option to pay to unlock more.
W: lvcaudio.com/plugins/clipshifter
Platform: Mac, PC



FERRIC TDS

Tape dynamics simulator

Most people don't have access to a vintage tape machine. Luckily, there are some great tape simulator plug-ins available that can really warm up your mixes and masters. FerricTDS is a simple but great-sounding module, that was inspired by the smooth dynamic shaping characteristics of some high-end reel-to-reel tape machines. Breaking down the behaviour of these machines to three core characteristics, it simulates dynamics for shaping the overall dynamic response, saturation for adding extra harmonics and limiting for controlling peak performance. Using 4x oversampled core algorithms, it can bring a smooth and classic sound to anything you run through it.
W: varietyofsound.wordpress.com
Platform: PC



BAXTER EQ

Transparent mastering and mix buss shelving EQ

EQ is one of the key elements of the mastering process, and is used for gently sweetening and accentuating specific frequencies within the whole mix in order to get the best possible end result. Baxter EQ is designed to be used in mastering chains, and has stepped controls for easy parameter matching (as opposed to continuously variable controls), a full dual-channel layout, mid/side encoding support and per-channel level for easy A/B matching. Using 64-bit internal processing, it also has oversampling, Baxandall shelving filters, 2-pole Butterworth filters and smooth shelving operation. Used as part of your mastering chain, it will help you create the optimum EQ shapes.
W: varietyofsound.wordpress.com
Platform: PC



VLADG SOUND LIMITER NO.6

Multiband limiter

Limiting generally comes at the end of your mastering chain, and is the last stage in processing a track. Although your DAW may come with a limiter, it could be pretty basic, and Sound Limiter no.6 offers more options – all for free. There are five modules: an RMS compressor, peak limiter, high-frequency limiter, clipper and a true peak limiter. Brickwall and soft limiting are supported, and use different timing settings depending on the effect you want. Mid/side is supported, and there's a multiband mode for more precise control over the limiting of different frequency bands. 4x oversampling is available, and you get retro level meters, and a choice of two GUIs.
W: <https://vladgsound.wordpress.com>
Platform: Mac, PC

FREEWARE Real instruments

The best free plug-ins that emulate real or acoustic instruments...


**UVI
WORKSTATION**
Multitimbral
instrument
host

UVI makes some excellent sound libraries, and these are hosted inside its UVI Workstation, available as a plug-in or standalone application. The app is free and comes with a few free demo instruments, including electric piano, analogue strings, jazz drums, Spanish guitar and synth bass. It also has some built-in effects and an onboard arpeggiator and mixer. If you choose to add paid instruments, they introduce extra features, but the demo version is unrestricted. As it can run in standalone mode it's also good for live performance.

W: www.uvi.net

Platform: Mac, PC


**KONTAKT
PLAYER FREE**
Multitimbral
VI host

Native Instruments' Kontakt is arguably the world's most popular software for hosting sampled virtual instruments. It also comes in a free Player version. You can also download the Kontakt Factory Selection for free. At 650MB, it's a generous free sound set, split into five sections. Band contains 13 instruments. World has six exotic instruments, and Synth has synthesised leads, pads, basses and drum kits. Vintage contains classic analogue synths and keyboards, while Urban Beats has five drum loop production kits.

W: www.native-instruments.com

Platform: Mac, PC


**BIGTICK
TICKY CLAV**
Hohner
Clavinet
emulator

If you've ever heard a funk record or some 70s disco, you've almost certainly heard the sound of the Hohner Clavinet. The real thing is a massive wooden beast of a keyboard, so it makes sense to recreate it in software. Ticky Clav uses a synth engine based on a physical modeling algorithm, that reproduces the string vibration and the two pickups of the Clavinet Model C. The 'click' part comes from the key click that was such a big part of the sound of the original. There's a built-in wah effect and selectable manual or auto wah.

W: www.bigtickaudio.com

Platform: Mac, PC

Fostex



The **NEW** RPmk3 Series Headphones

After 30 years of their headphones being favoured by studios all over the world, Fostex have further enhanced their RP driver to provide even greater linear sensitivity and neutral, transparent sound. The RP driver particularly shines in problematic mid-hi frequencies where dynamic designs can fail. Whether your preference is for closed (isolation and focus), open (natural and spacious sound), or somewhere in-between, the new Fostex RP series offer you comfort, durability, and reference quality for all professional applications.

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iD14

10 IN | 4 OUT
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asp
800

8 CH MIC PRE & ADC
WITH HMX & IRON



Used by thousands of studios and professionals worldwide the Audient sound can now be on your desktop. Featuring the all new virtual scroll wheel *ScrollControl*, our award winning audio interface **iD14** alongside our brand new 8 channel mic pre **ASP800** (with tone controls **HMX & IRON**), offers up to 10 channels of our renowned console mic pre design at your fingertips!

www.audient.com

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→ **FREWARE** Real instruments continued...
**MDRUMMER
SMALL**
Sampled drum
instrument

Melda makes a huge range of effect and instrument plug-ins, and even gives some of them away for free. A smaller version of the paid version, MDrummer Small still comes with 500MB of samples, multisamples and rhythms. It's available in all formats, and is also standalone on Windows (though not on the Mac). You get over 30 drum kits made up of more than 400 drum components, over 200 samples, 50 multisamples, 60 rhythms and more than 2,500 loops. It has a built-in sequencer for creating patterns and technology to help you humanise your beats. A demo version of MDrummer Large is also included, so you can check out whether or not you want to upgrade to get extra features.

W: www.meldaproduct.com

Platform: Mac, PC


**COMBO
MODEL F**
Virtual combo
organ

Combo organs from the 60s have remained popular, finding fans more recently in guitar-based bands. Since the originals are rare, expensive and hard to maintain, software is the way forward. Combo Model F is easy on the eye and has a four-octave keyboard with a harmonic range of six polyphonic octaves. There are four footage tabs and three treble voice tabs, plus a multi tone booster and knee level control, as well as a bass voice, playable from the grey keys. A vibrato pedal adds modulation to the signal, and there's adjustable tuning per-note, a reverb unit, speaker cab simulation and velocity sensitivity. The whole thing works on modeling rather than sampling so it's especially flexible.

W: <http://www.martini.com/combomf>

Platform: Mac, PC


AZR3 ORGAN
Virtual
drawbar organ

The drawbar organ is a classic sound, yet real ones are insanely impractical to buy, maintain and transport. This virtual instrument gives you three different organ models and nine drawbars, which can be modified to change the tonewheels in use and the amount of the many frequencies in the signal. As well as six waveform shapes, you get key click, percussion switches, sustain and vibrato, as well as key split mode, monophonic mode for bass sounds and scalable pitch bend. Onboard effects include saturation, distortion and fuzz, and there's a rotating speaker effect. The lower speaker can be switched between fixed and rotating.

W: <http://www.kvraudio.com/product/azr3-by-rumpelrausch-taips>

Platform: PC

FREWARE Guitar

The guitar gets a section to itself. Here's a list of the best six-string free software...


VB-1
Virtual bass
instrument

Although technically discontinued, Steinberg still makes its classic VB-1 available for download. It has made it free, too. It was a staple of early Cubase VST systems, and although a little basic it's fun and can bring a proper electric bass sound to your tracks. It's four-voice polyphonic, which is fine for bass, which is usually monotonimbral, and has damper, pickup position, pick position and wave morph controls as well as a randomiser. In a world of mega-sample libraries, it's a refreshing 4.3MB.

W: http://www.steinberg.net/en/support/unsupported_products/vst_classics_vol_1.html

Platform: Mac, PC


**KEOLAB SPICY
GUITAR**
Acoustic guitar
synthesiser

Acoustic guitars are pretty difficult instruments to recreate the sound of. You either use lots of samples, or as Keolab has done, model using synthesis to recreate the guitar tones. There are nine types of guitar here: four folk, two classical, one flamenco, one jumbo and one gypsy, as well as a choice of nylon or steel strings. It works like Kontakt in that you have MIDI keys for playing notes and then control keys for the playing articulations, such as legato, palm mute, harmonics, sustain or chord detection. There are different chord types and a strumming engine to recreate the action of playing.

W: www.spicyguitar.com

Platform: Mac, PC


**NI GUITAR RIG
PLAYER FREE**
Guitar
processing
suite

Available as a plug-in or standalone app, this free version of NI's monster Guitar Rig processing suite is a free giveaway, expandable with extra packs. You get one amp, 17 cabs and 13 effects from the full version, as well as 50 presets. These include the tube compressor, screamer, studio reverb and delay, two tape decks, a tuner and a metronome. The software uses a drag and drop system and a tag-based browser, and there's MIDI learn and automation support, plus Live View to streamline the workflow while playing live.

W: <http://www.native-instruments.com>

Platform: PC

FREWARE Guitar continued...



**VOXENGO
TUBE AMP**
Virtual tube
amplifier

Tube Amp is an AU and VST plug-in that applies asymmetric tube triode overdrive usually found in single-tube microphone pre-amp boxes. The sound this plugin produces varies from a mild 'warm' overdrive to a fuzzy distortion. It also includes a -6dB/oct low-pass filter that's built into the plugin's tube/valve modeling equation, and can imitate a lower-quality tube triode. There's a switchable output saturation stage, which can be used to overdrive the output signal and all the standard Voxengo plugin features, such as full multi-channel operation, channel routing and built-in oversampling. It's great for guitars and for dirtying up sounds such as vocals, drums or synths.

W: www.voxengo.com

Platform: Mac, PC



**SIMULANALOG
GUITAR SUITE**
VST guitar
plug-in suite

This suite of plug-ins models various amps and analogue processors. Among the models are a Boss DS-1 distortion and SD-1 overdrive, Tube Screamer, phaser, modulation, a '69 Fender Twin and a Marshall JCM900 Dual Reverb. It's provided as-is with no support, but it's still well worth checking out if you're on a PC. According to the developers, it was born inside an academic research project about the modelling of electric devices, and then applied to the musical instrument field as an evolution of the techniques available in commercial units. Its most important feature is the high precision of the simulation.

W: <http://www.simulanalog.org/guitarsuite.htm>

Platform: PC

**Part
two**

We had intended to bring you just 50 plug-ins in this our freeware 'best of', but along the (very long) way we unearthed some other interesting categories and titles that are well worthy of inclusion, so tune in next month for more bonus freeware goodies. We'll be looking at DJ freeware plus some more effects titles and some that are simply too hard to categorise... Meanwhile, check out this month's DVD, where we've assembled a massive 67 freeware titles for you to use straight away and make music for free...

FREWARE DAW

Complete DAWs, free? Yes, there are some available – here are the best...



MULAB
Cross-platform
music
production
studio

Believe it or not, some DAWs are free. MuLab works on Mac or PC and has a remarkable feature set. As good, in fact, as some entry-level paid DAWs. You get audio and MIDI multitracking, automation support, modular architecture and multicore CPU support. There's support for REX files, slicing sampled drum loops, a streamlined mixer and a selection of synths, samplers and effects and various sample players. Native MUX modules can be mixed with VST plug-ins and there's ReWire, a browser, drag and drop and multi-monitor support.

W: www.mutools.com

Platform: Mac, PC



SAVIHOST
Standalone
VST host for
Windows

This isn't strictly a DAW, but will be of interest to many Windows users. It's always been slightly annoying that if you wanted to load and play a single VST instrument you had to boot up a DAW. Apart from anything else, this could introduce another source of crashing. With SAVIHost, you can load one VST instrument at a time without using a DAW. It has a virtual keyboard, as well, and is of particular use for anyone performing, for example, with their favourite piano VSTi, but where that instrument hasn't come supplied with a standalone version.

W: <http://www.hermannseib.com/english/savihost.htm>

Platform: PC

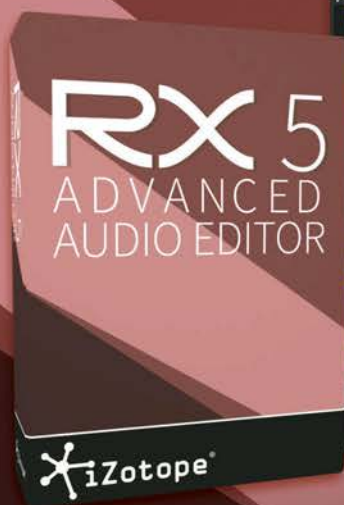


**STUDIO ONE
PRIME**
Free version of
popular DAW

Presonus's Studio One is an increasingly popular DAW for Mac and PC and though there's a demo version, there's also a free version in the form of Studio One Prime. This has some of the core features of the full version. It features an elegant single-window environment with drag and drop and multitouch support, unlimited audio tracks, as well as MIDI tracks, buss tracks and effects channels. You get the free Presence XT expandable sampler with a sound library, as well as nine audio effects including Ampire, Beat Delay, chorus, reverb and more. Check it out for a flavour of what it can do.

W: www.presonus.com

Platform: Mac, PC **MT**



RXTM 5

The industry standard for repairing and enhancing production audio. Paint audio problems away in one click with the new Instant Process tool, get cleaner dialogue with the new De-plusive module plus many other time-saving, specialised post production tools.

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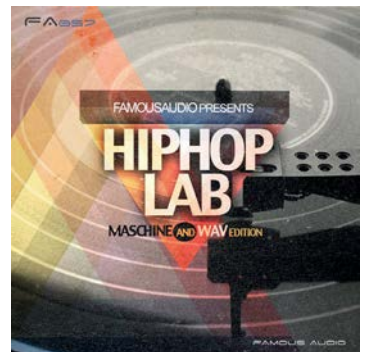
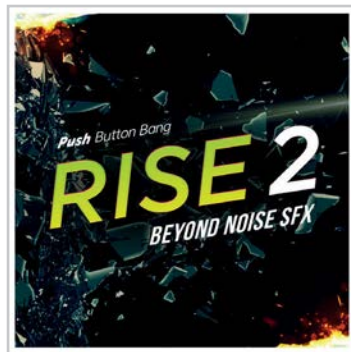


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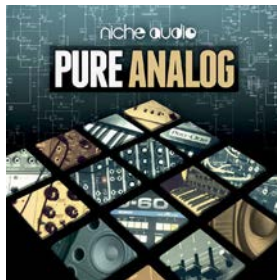
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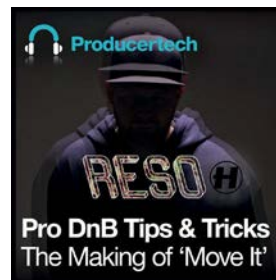
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MT Feature Interview

TALKING TECHNO BULLETDODGE RECORDS

The latest release on Scotland's Bulletdodge Records features a host of legendary dance pioneers and an equally pioneering live set. Label owner Gareth Whitehead speaks to MT about the album and taking techno out live with Live...

Gareth Whitehead is the label owner and one of the artists on Bulletdodge Records, founded in 2008 and focused on producing innovative house and techno music. The label's latest release is a compilation celebrating the history of those genres and includes a seminal line-up of artists, including Kevin Saunderson, DJ Pierre and Marshall Jefferson. Gareth has been promoting the album with some unique and innovative live performances at venues across the UK, including the Brighton Music Conference, and featuring a tech-heavy set-up with Live at its core. *MusicTech* caught up with Gareth to talk techno, tech, Live and live...

MusicTech: Tell us about your own music production background...

Gareth Whitehead: "I was into music at a very early age. My dad was a keen musician, and that led me to learn how to play the guitar. I played in bands throughout my teenage years, and didn't get into electronic music until I was about 18. When I eventually discovered it, I was hooked, and after leaving school I pursued a degree in music technology, which then after graduating led me to work in several studios before finding my feet and setting up Bulletdodge in 2008."

MT: Tell us about your music-making approach...

GW: "My philosophy is to make music that ultimately I'm happy with. It's important to create your own

/// "It's important to **create your own sound** and **not mould your music to fit someone's agenda**" ///



Above: The album was mixed in the Neve studio at SSR

Left: Gareth and Mike performing tracks from the album

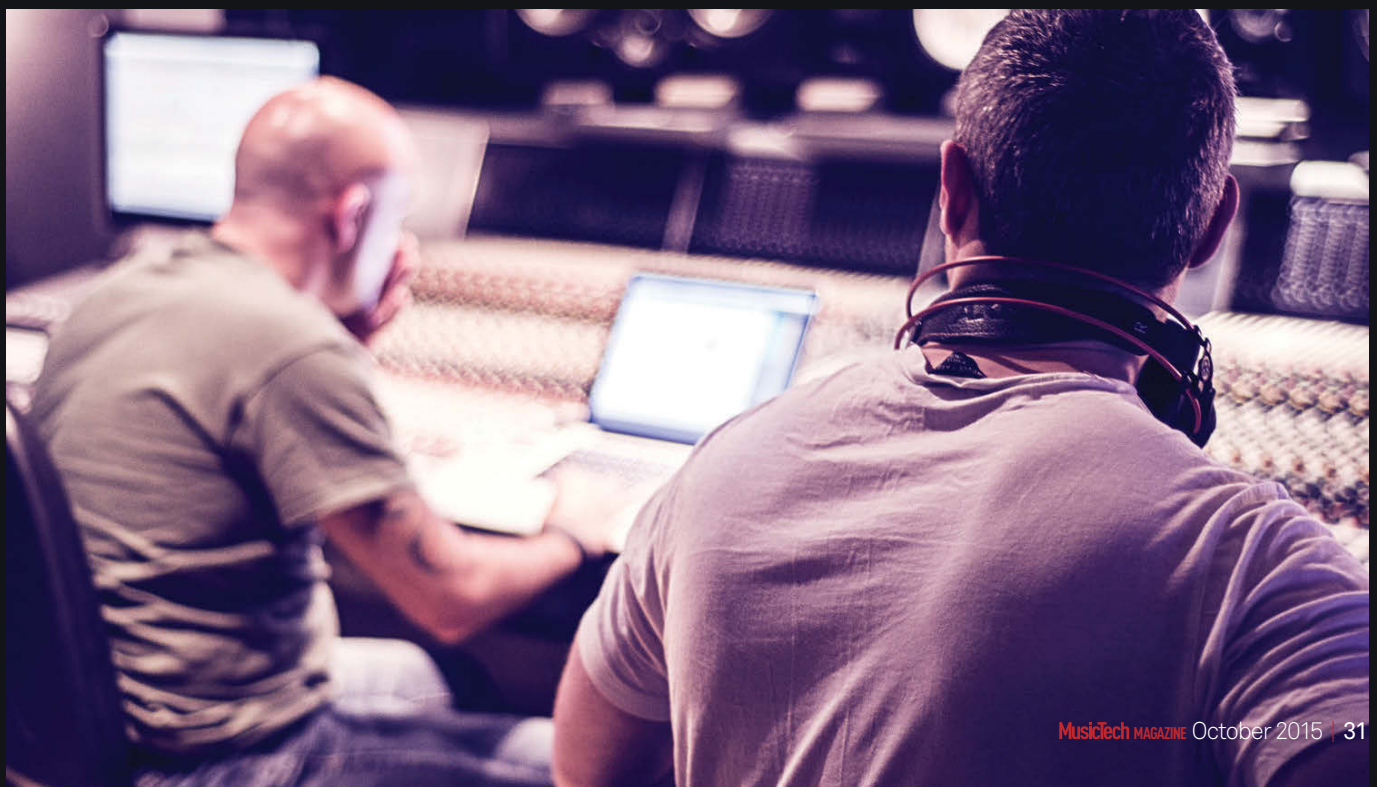
Below: Gareth and Mike mixing the album at SSR

sound, and try not to mould your music to fit someone else's agenda. I've been guilty of it myself in the past, but one of the reasons I set up Bulletdodge was so that I could have a musical platform and complete control over my creative output. People are very quick to judge and comment, but at the end of the day if you put your heart and soul into something – whether it's EDM, techno, blues or pop, then that's what's important."

MT: Tell us about how the album was put together...

GW: "Each track involves collaboration, with me working alongside one of the originators of techno: Kevin Saunderson; the godfather of house, Marshall Jefferson; the legendary house vocalist Robert Owens; and Brooklyn innovators Lenny Dee and Frankie Bones.

"The album also includes appearances from long-term Bulletdodge collaborators Carl Cox, X-Press 2, Darren Emerson, Adamski, Inxec, Detroit →



→ Grand Pubahs, Space DJz, Tom Taylor and Werner Niedermeier, plus many more. The album was created predominantly on Ableton Live 9, and once the tracks were finished the projects were taken down to SSR London (www.s-s-r.com) to be mixed by Michael Greig and me.

"This was a significant part in how the album was characterised; with Michael's attention to detail and technical wizardry, the album exudes a definitive sound.

"My studio is pretty modest, using a Windows-based computer that runs Ableton Live 9 Suite and a host of plugins and additional software. I currently use a PreSonus AudioBox 22VSL audio interface and monitor with a set of Tannoy Active Reveal speakers. The set-up I have now hasn't really changed in the last few years, other than changing audio interfaces, which I have a habit of doing, and the odd bit of kit.

"I've worked in several studios over the years, but always retained a small home studio set-up for my own productions. When I'm not producing and

Above: The Korg microKorg is a hardware favourite

Below: Gareth enjoying his work in the studio



running the label, I lecture music business and sound production at New College Lanarkshire, so I'm always keeping myself at the forefront of new studio technologies.

"At SSR, we used the Neve studio to mix the album, which boasts a Neve VR60 console, Mac Pro computer and Yamaha NS10, Adam S3X and Dynaudio monitors. Michael mixed in Ableton Live 9 Suite, but applied the Pro Tools HDX converters. His method was to buss stems from the projects back onto the board and use the Neve as a summing

/// "I like to start by **throwing ideas into Ableton**, and **initiating a groove**. I'm a stickler for forging a **vibe quickly**, otherwise **I move on**" ///

mixer. We really enjoyed the sound of the board as the project was developing, so consequently integrated it more – in particular its EQs and compressors. There was an abundance of outboard effects used in the process, too, in particular the Yamaha SPX990, Roland SDE-330 Dimensional Space Delay, the Roland DEP-5 Reverb and Lexicon PCM 70 and 224 Reverbs. The latter was used on shorter percussive sounds, like the snares and claps. Similarly, a Drawmer 1960 was used for parallel compression on some of the drum tracks, notably *The Villain*.

"Pultec EQ Clones were used, alongside Cartec EQs to attenuate some low-range frequencies on the kick. Thermionic Culture's The Phoenix was used over the master buss, as it gave a nice side chain bass cut.

"Ableton Live's own effects were used extensively, namely the Simple Delays and Ping Pong Delay."

MT: How would a track on the album take shape?

GW: "I always like to start by throwing ideas into Ableton, and initiating a groove. I'm a stickler for



TECH TIP: SIDE CHAINING

MT: Talk us through at least one of your production tricks...

GW: "In the context of mixing the album, side chaining was paramount, but not always just used to duck tracks from the triggered kick. Moreover, it was commonly used in such a way as to permit percussion patterns to duck one another to give clarity to the tracks. For example, there might be a percussion pattern coming in as a loop, which would be compressed, then another loop would come in to augment the previous loop – hence using it to dip the level and side chain it. So Michael was using less volume control and more side chain compression to make the tracks breathe."

forging a vibe quickly, otherwise I move onto another idea. Once I establish the hook, I advance it until I feel I have all the main components. It might only be 8 to 16 bars in length, but that's enough to determine whether or not I have the essence of a good track. Then I start to strip it down and structure the track in that formation. If I know I have the body of the track, it's easier to strip things back to the intro. Once I've then arranged the track, I can then start to get more intricate with the editing.

"I consistently use Ableton's own effects, like ping pong delays and its Glue compressor for side chaining. I use the Audio Filter for high-pass filtering in breakdowns, drums and basslines."

MT: What else would you typically use, aside from Ableton Live's plug-ins?

GW: "The Korg microKorg is one of my favourites, and is one of the few pieces of hardware I consistently use. The bass tones are exquisite and have been inherent in so many of my productions for several years. It's been such an intrinsic part of my creative process that Tony Scott, a former collaborative partner of mine, named our label and production name after its Edit Select function, due to my extensive usage of it. I also have a Boss OS-2 overdrive/distortion pedal that I like to send a signal to and then back to the computer to add that

edge to certain sounds.

"With regards to soft synths, I regularly use the U-he ACE; Rob Pape's Predator and Albino; the Korg Legacy Collection; Native Instruments' Massive and FM8; and the Arturia Mini Moog, Jupiter and Prophet. For pads, I can't see past the Albino and Prophets. The ACE is great for house chords and stabs. For basslines, I like the Predator and Korg's MS-10 or PolySix.

"For additional overdubs on some of the tracks at SSR, the Virus TI2 and Roland TB-303 were used to add increased character and dynamics to the tracks.

"I used the Waves Platinum bundle, principally the True Verb for vocals and Ultramaximizer and GTR3 Stomps to strengthen bass or lead lines; and UAD Plugins were integral to preparing the live set. During the mixing process, the live set parts weren't created, so the projects had to be revisited and UAD effects applied to certain tracks."

Below: Gareth at his smaller home set-up



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→ **MT:** Talking of the live set, tell us a little about what you want to achieve with it...

GW: The main focus is on the Ableton Live and Roland Aira element, which consists of Mike and myself stripping all the elements from the album down and rebuilding it to create a 45-minute to one-hour set. It transforms the sound of the album from the recording studio sound into a more club/live sound.

"Michael and I want to be able to alternate between different sections of each track – so, the percussion of one track over the bass of another – in many respects remixing the album live. To do this, the individual channels of each track have to be bussed down into eight stems and eight scenes in Live. Over time, the intention is to replace the audio stems with hardware improvisation. Most of the live set is currently audio files from the studio, chopped up, but we'll be augmenting the drum sounds with

/// "The live scene is **changing considerably**; there's a lot of **new equipment** on the market, but whether it's getting utilised in a live environment is **yet to be seen**" ///

the TR-8 and the synth and bass with the Roland Aira stuff. We use the following equipment: Ableton Live 9, with the Push controller and Akai APC40, Roland TR-8, the Roland TB-3, the Roland MX-1 Mix performer, Roland System-1, Doepfer Dark Energy 2 and a Strymon TimeLine delay pedal."

MT: What do you make of the live scene at the moment? Are enough people stretching

/// DODGE THE BULLET WITH LIVE AND STUDIO ADVICE...

MT: *What advice have you picked up from playing live?*

GW: "Before integrating any hardware, make sure you can perform your set with minimum moves. The Novation Launchpad or Ableton's Push are both great controllers that allow you flexibility and versatility. Once you've practised, start to incorporate more effects, and then start substituting the pre-programmed audio with hardware."

MT: *And from working in the studio?*

GW: "Learn your craft as best you can, listen to other producers and what they are doing. Compare arrangements, etc – this will help you understand the production process and help you evolve your own sound quicker."

MT: *And from the music industry as a whole?*

GW: "It's important to take chances and opportunities whenever they arise. You never know where it could lead to. The quintessential key being to network and build your base of contacts."

themselves, and do you think it is essential to get noticed?

GW: "The live scene is changing considerably; there's certainly a lot of new and exciting equipment appearing on the market, but whether it's getting utilised in a live environment is yet to be seen. Technology has made live performances easier, which has been a determining factor for many people, especially DJs, but there are always people out there who want to prove otherwise and be challenged. I think being different and delivering an all-encompassing live set will certainly make you stand out, but whether it's essential to get noticed, I'm not sure. I think getting noticed is determined by so many other factors."

More gear

MT: *Is there any gear you are after for your studio?*

GW: "Modular gear. I'm looking at the new Roland System 500 Series and other bespoke modulators that are appearing on the market, and more from the Doepfer range."

MT: *Is there anything that you would like to see developed in terms of studio technology?*

GW: "Having something along the lines of a hardware sequencer that allowed you to load in an Ableton Live project. This, potentially, could eliminate the need for a computer whilst you're performing live."

MT: *What have you got planned for the near future?*

GW: "After the album is released, I'll be concentrating on developing the live set and showcasing it globally. While embarking on the live shows, I'll simultaneously be putting together the remix album, which will follow on from the album, having more hand-picked producers that have influenced the scene to rework the originals."

MT: *And, finally, what is the future of music production?*

GW: "It will continue to flourish, I think. Expect to see more and more non-conventional methods to make music." **MT**

Below: An overview of the live set-up with Live and Aira at its core



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Creative FX Routing

Taking a more creative approach to FX routing can bring new life to an otherwise tired collection of plug-ins. **Mark Cousins** explores this sonic route...

In the search for music perfection, most of us look for the 'killer plug-in' that makes everything sound good – whether it's some form of magical compressor, the ultimate reverb, or a boutique EQ. In truth, though, it's often where and how we use our plug-ins that transforms an ordinary mix into something truly exceptional. Rather than simply inserting one plug-in after another, isn't it about time you thought more about the routing and ordering of your plug-ins? Indeed, look more inquisitively at the signal path in your mix – using inserts, busses and a combination of both parallel and serial processing – and you may find that your music becomes all the better for it.



Look more at the signal path in your mix and you might find that your music becomes better

Channel tunnel

Most plug-ins tend to get placed into a channel's insert path using the ever-expanding series of slots just beneath the Input assignment. From an operational standpoint, this approach makes sense, especially in respect to tagging an instrument with its own combination of plug-ins. What you see, therefore, is a simple serial signal path where one plug-in's output flows into the next plug-in's input. The effect of the processing is cumulative, with each plug-in adding to the overall effect achieved.

Even in this simple setup, it's worth remembering that the order of the plug-ins has a big effect on the result achieved. Place a reverb halfway down the insert path, for example, and every plug-in after will affect both the dry signal and the reverberated. Likewise, EQ before compression (rather than after) can affect how a compressor behaves, especially when large amounts of boost are used. Ultimately, none of this wrong (indeed, it might well be the effect that you're after), but it's important to remember some alternative approaches.

The second most common way of using plug-ins is with

a buss send combined with a separate auxiliary channel. Typically speaking, the use of buss sends/aux channels is primarily reserved for ambience effects like reverb or delay, with the main advantage being that any number of channels can be routed through to the effect, with an individual buss send pot controlling the respective level. What we've described here is an example of a parallel routing, with the reverb or delay running in tandem with the main channel fader.

A key advantage of parallel processing is that we can create some further distinction between where and how signals get processed. In the reverb example, plug-ins on our channel insert path only affect the dry signal, whereas plug-ins on the reverb's aux fader only process the reverb tail. An equalizer after the reverb, therefore, can be used to colour the timbre of the reverb without having any effect on the main signal that's on the channel path.

Having understood the principle differences between serial and parallel processing, therefore, let's start to imagine the myriad of ways plug-ins can be applied. Firstly, it isn't the case that aux channels are only for reverb and delay. Plug-ins like compression and distortion work particularly well in a parallel setup, using the return level (on the aux fader) to set a balance between processed and unprocessed signal. You can also achieve some interesting results placing a filter (either low or high-pass) on the aux channel ahead of the compression or distortion, so that the 'mojo' enhancement is only applied to a specific frequency band.

If you're using parallel processing a lot, it's well worth noting the routing options both in respect of channels and aux faders. Rather than using a



FOCUS ON... DECLUTTERING YOUR MIXER

If you're working on a laptop it's increasingly easy for Logic Pro X's mixer to engulf your screen, blocking your view of the all-important arrangement window. One solution is to par down some of the additional graphic elements and make the mixer closer to what it was in Logic Pro 9. On the whole, I prefer a mixer without Gain Reduction meters (especially if you're using lots of third party compressors), EQ thumbnails, MIDI effects and Track Icons. You can find all of these options under the Mixer's local menu View > Channel Strip Components, as well as the option View > Hide Legend that removes the function labels on the left-hand side of the mixer.

MT Step-by-Step FX Routing

01 Effects placed across insert paths work cumulatively – in other words, each plug-in adds to the output of the previous insert. In this example therefore, the compressor compresses both the EQ'd drums and the reverb as it's the last plug-in in the insert path.



02 Using the aux sends system we have the option of 'splitting off' our effects, running them separately from the main channel insert path. With the reverb separate, the compressor isn't compressing the reverb, just the sound of the EQ'd drums.



03 While we tend to perceive aux sends as being used for reverb and delay, they can be turned to a range of FX applications. The best example is parallel compression, whereby compression is applied via the aux sends, rather than inserts.



04 Create sends for both the guitar and drums and instantiate a compressor across the newly-created auxiliary channel. On the compressor, ensure there's plenty of gain reduction being applied - with a fast attack, medium release and 10:1 ratio.



05 Blend-in the desired amount of signal from the aux channel, so that you add body to the drums and guitars. Varying the sends from the individual channels adapts the body-enhancing effect, maybe placing more emphasis on the drums and less on the guitar.



06 Now let's take a look at processing the guitar using dual amplifiers. Change the guitar's output assignment to Buss 3 - this will create a new auxiliary channel. Add another using the Mixer's local menu: Options > Create New Auxiliary Channels.

buss send, you can route one or more channels directly through to a buss using the channel's output assignment. What's particularly interesting, though, is that any number of aux channels can be set to the same buss assignment, letting you create multiple paths running at the same time.

In the walkthroughs, we'll see how we can use this feature to create a parallel guitar amplifier configuration –

whereby a single input source is routed to two parallel aux channels, each with their own FX path and guitar amplifier. In effect, the setup mimics the sound of splitting a guitar and sending it through two separate amps in the same room, each with a slightly different FX chain and amplifier settings. This parallel configuration is impossible to create using Amp Designer and Pedalboard alone, and, thanks to →

→ the routing (rather than simply duplicating a pre-recorded audio track) it's possible to be played through 'live'.

Rather than thinking of plug-ins as 'cumulative' processing, therefore, start to think about how they might individual contribute to the overall sound, and how they might want to interact with one another. For example, do you want to compress the sound of the reverb? Do you

want the delay taps with or without reverb on them? Often these small but important decisions can have a big effect on the effectiveness of your mix and, more specifically, the distinction you create between instruments and sonic features in your soundstage.

Obviously, the walkthroughs here only begin to scratch the surface of a more creative approach to FX routing. Each

MT Step-by-Step FX Routing...cont'd



07 Make sure both auxiliary channels are set to Buss 3. On the first buss setup a combination of a tape delay and an amp setting of your choice. Set the Delay to its Sync setting, the time to 1/16th with just a small amount of feedback.



08 Duplicate the settings from the first buss (we're labeled as Amp L) to the second (Amp R). Most importantly change the delay setting to 1/8th, and then make some small changes to the amp, like mic position and a bit more drive.



09 Pan the amps hard left and right. As the difference between the amps is subtle, we achieve a pleasant widening effect. The delay effect is more dramatic, though, with a distinct movement between the speakers courtesy of the different delay times.



10 To place both amps in a virtual room, create a new buss send (to Buss 4) from the two auxiliary channels. Instantiate a reverb across the newly-created auxiliary channel with a small chamber setting.



11 Because of the way we've created the routing, you always have the option of monitoring through the plug-ins live. Of course, with the alternative method – where the finished audio track is simply multiplied – this isn't possible.



12 The next example explores the possibilities of parallel multiband distortion, using two buss sends from the Drums and Compressed Drums channels. Create two aux faders both set to the same buss input – Buss 5, in this case.

plug-in in Logic brings new possibilities in both parallel and serial operation, so it's well worth contrasting the use of plug-ins applied across channel inserts with an approach that incorporates elements of parallel processing using the aux channels. Most importantly, you may well find that some of your most neglected plug-ins gain a new lease of life used in a more creative way, often creating effects that

you didn't think possible. **MT**

This tutorial is endorsed by Point Blank. With courses in London, online and now in LA, Point Blank is the Global Music School. You can study sound to picture on their Music Production Diploma courses, with pro industry tutors. More info here: www.pointblanklondon.com.

This tutorial is also one of the all-new features in the latest MusicTech Logic Focus, out now.

MT Step-by-Step FX Routing...cont'd



- 13** Let's now look specifically at the low-end part of our parallel multiband distortion. Start by positioning a High Cut (around 350Hz) using the Single Band EQ. Use a steep curve, at 48dB/Oct, to ensure a sharp cutoff point.



- 15** Solo the low-end aux channel and instantiate a distortion plug-in, like the Distortion II. Experiment with the type of distortion (Class AB1 soft, in this example) and adjust the amount of Drive to set the amount of 'body' you want to add.



- 17** The final step is to balance the amount of parallel multiband distortion you want mixed with the input. The effect works best in discrete amounts, just adding a small amount of body from the low-end or a touch of sizzle.



- 14** Repeat the same process, this time applying a cut to low-end so that we're just left with high frequencies. Start with a frequency setting around 2150Hz, or 2KHz, and adjust the slope to achieve a sharp attenuation.



- 16** Now solo the high end and find a tone of distortion that complements the sound you're trying to achieve. You might use a different distortion model, or change the amount of drive to create the right amount of 'sizzle'.



- 18** The only downside of a more creative approach to FX routing is a complicated mixer. Try colour coding the related aux channels, so you can see which FX returns are working in tandem to produce a parallel effect.

III≡ Ableton Live The Ultimate Guide to Ableton Live Part 8



Build a musical structure in real-time and capture it to the Arrangement View

Martin Delaney explains how to use scenes to organise clips and then capture them into Live's Arrangement View, ready for editing...

Last time, we worked on applying audio effect devices to our Live project. That was the final step in the process of creating and compiling our content prior to organising it into some sort of structure for a more 'traditional' production routine. Right up to the point of getting everything into a workable timeline, and setting everything in stone, Live gives us options, we can always rethink structure, try new ideas, and introduce new instruments and effects.

And that's where we're up to. We have a small number of clips, a few audio effects, and now we need to knock them into shape. As I said, Live gives us options; if you really want to – or if for some technical reason, you have to – you can use Live in a totally linear fashion. You can spend all your Live time working in the Arrangement View, laboriously dragging clips around on screen, and perhaps working with your eyes more than your ears. Used in this way, Live behaves more like other DAWs, such as Cubase and Logic. However, it lacks the refinements and focused user interfaces of those applications. I'd go so far as saying if you don't aim to use Live's Session View, it's not really worth using Live at all – it's *all* about the Session View! So, for this tutorial, we're looking at how we can use Live's Session View and global recording functions to totally short circuit that old-school way of

working, creating our arrangements in a way that's more like recording a live take – Live is an instrument, after all!

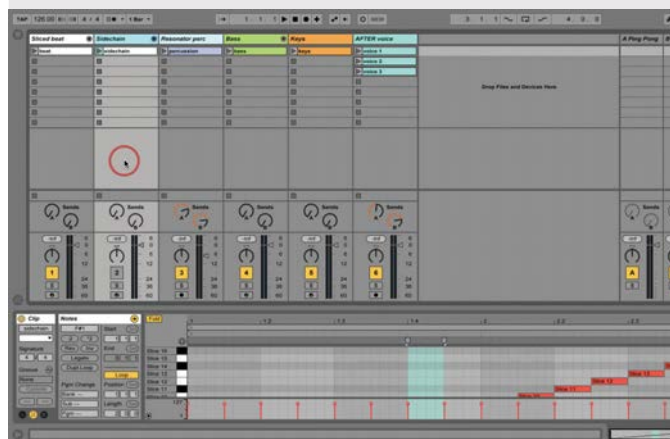
So we're launching scenes and individual clips to build our structure. You don't have to do it this way – you don't have to use scenes at all. You can just hit record and start triggering those clips; a technique which works better with Push and Launchpad-type devices, although they do scene launching as well. The ideal is to create a hybrid method where you're using scenes for the 'big picture' changes, and clips for other, less global, activity.

When you're using scenes to switch song sections, you can create more organic transitions by employing the Clip Stop buttons. If you have a long clip that you want to continue playing across two or more scenes, click in the empty slot below the long clip, and use Cmd>E to remove the clip stop button. Now, when you trigger the following scenes, the clip in the first scene continues playing. This sounds good because it's no longer just the sound of eight clips going on or off simultaneously, there's a bit more 'bleed' between parts when you want it. Use Cmd>E to restore these buttons, too. You can also help expand that organic vibe by playing

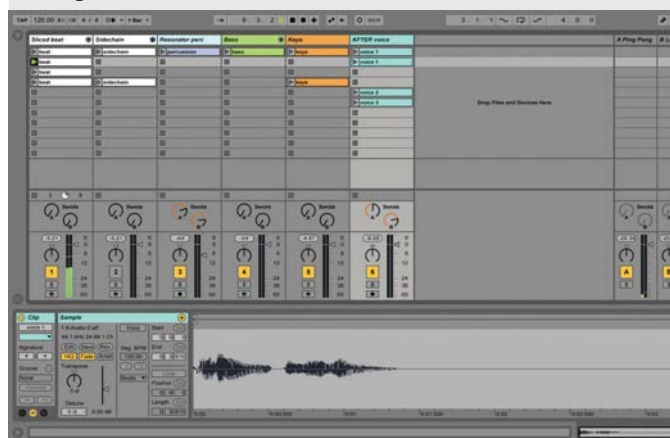
FOCUS ON... HARDWARE LAUNCH

Live is very spontaneous to use, that's why we're working with the Session View here, to jam and capture everything we do. You can work wonders using just your computer keyboard to control Live, with a combination of keyboard shortcuts and the Key Map Mode, but for advanced (and fun) clip launching, you'll be better off using a hardware MIDI controller. For the tasks in this issue's tutorial, I'd recommend something like Push, Launchpad Pro, APC40, or TouchAble on iOS. All of these let you trigger clips and scenes, and control effects, and they all show correct clip colours too.

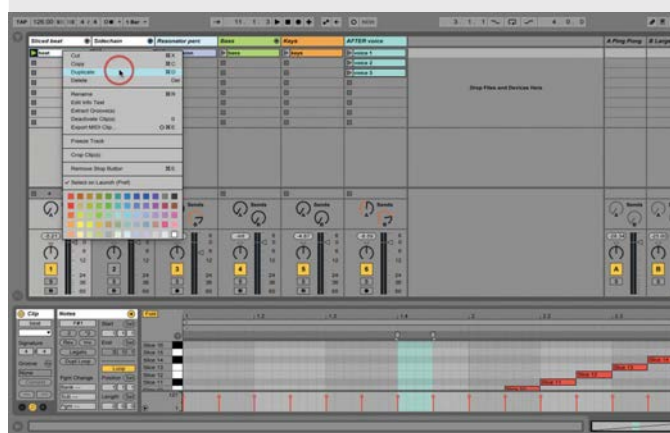


MT Step-by-Step Clips and scenes

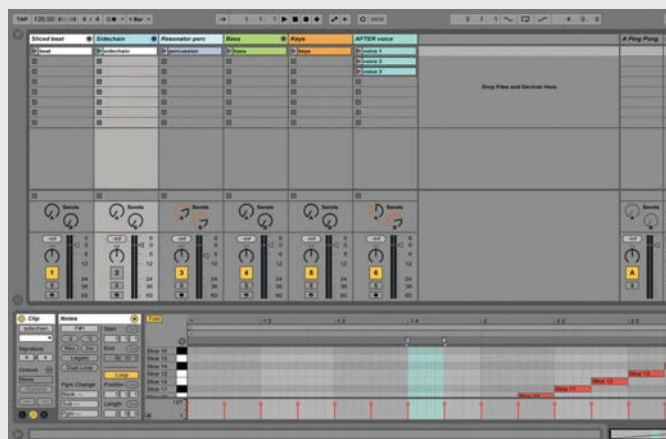
01 Let's begin as usual by loading the up-to-date example Ableton Live set from this month's DVD. I've included all the steps we went through in the last tutorial. The set is called 'TUGTAL8'.



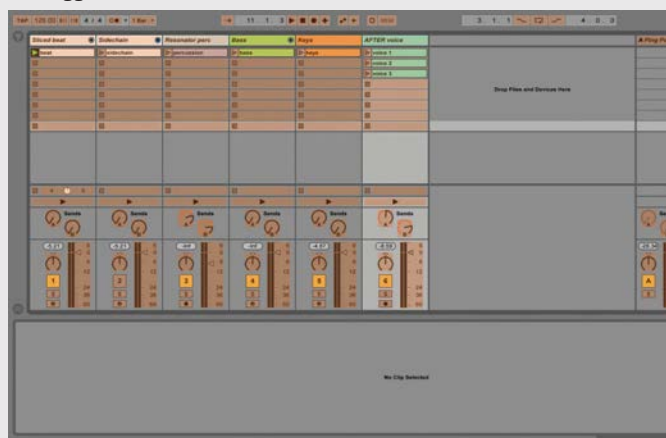
03 Scenes are awesome because they give us an easy way to create dynamic musical structures in Live's Session View, without having to make the more permanent commitment of working in a timeline.



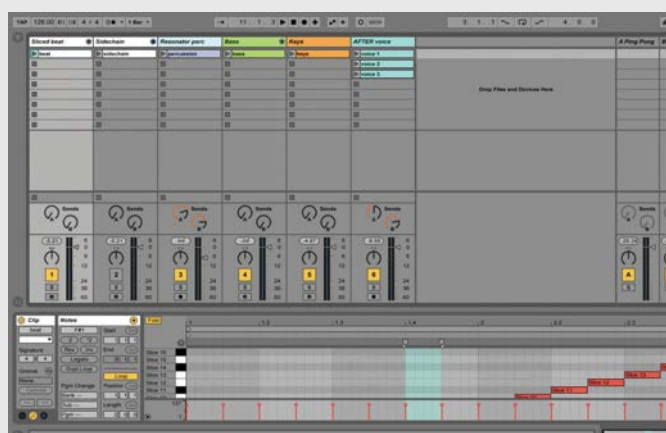
05 We can create scenes by dragging clips up and down. Copy and paste them with **Cmd>C** and **Cmd>V**, and duplicate with **Cmd>D**, where they'll automatically be placed in the next row down.



02 You already know about clips; now we're using scenes as well. A scene is a horizontal row of clips, across any number of tracks. We trigger scenes with the Launch button in the Master Track.



04 As far as launching and navigation are concerned, scenes are quite like clips. We can launch them in any order, using those Master Track buttons, or MIDI messages, or assignments from our computer keyboard.



06 Should you need more empty scenes, use **Cmd>I**. However, this way of building scenes is not very spontaneous – there's a better way. Click the Stop Clips button in the Master Track. Launch your beat.

around with the various clip launch modes, which we talked about in part 1 (see *MTF Ableton Live 2015*).

Scenes can be triggered with the triangular launch buttons in the Master Track, or mapped to MIDI control, or the computer keyboard. They don't have overall launch or quantisation characteristics; that's still set at clip level.

Scenes can re-ordered by dragging them up and down

in the Master track, and you can also delete or copy them from there. You can use the Context Menu to rename and colour-code your scenes. Renaming is interesting – as well as helping you label your song sections, it gives you a way to make more dynamics changes. You can use scene names to tell Live to change project tempo and time signature throughout your set. This is good for small tempo →

MT Step-by-Step



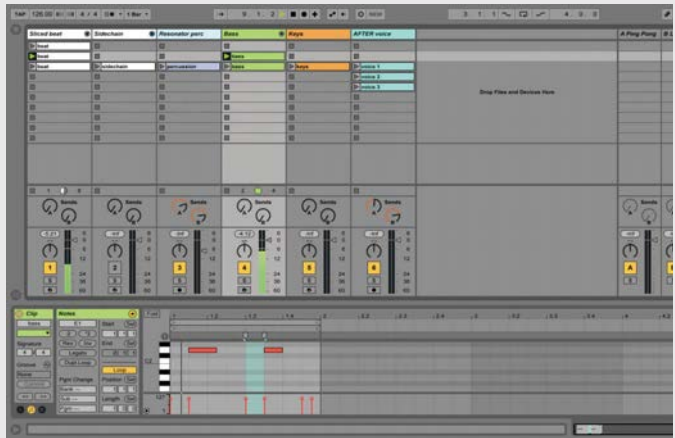
07



09



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We want to move our Session View clips into the Arrangement View, so we'll have a linear timeline to enable

the last stages of song arrangement and mixing. We use the Session View and Global Record to do this, so we can create a song structure in a spontaneous way, that also includes audio effect and mixer changes, which will be recorded as automation that we can edit afterwards.

Recording begins in different ways according to your settings in Live's Preferences. If count-in is enabled, you'll

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MT Step-by-Step Clips and scenes... cont'd



- 13** Make sure the Automation Arm button is yellow, to ensure control moves are correctly captured as clip and track automation. Push users have a dedicated button for this on the hardware.



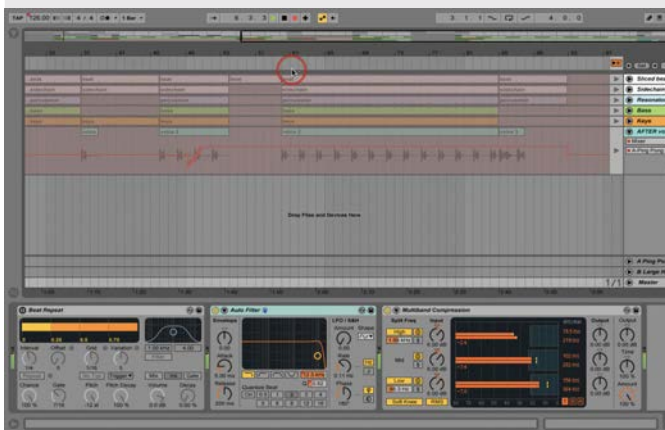
- 14** You can stop clips by launching others in the same track with the Stop buttons, or by putting them into Toggle Mode if you're using hardware, so they go on and off when tapped a second time.



- 15** Shift+Click on the Arrangement Record button; it'll go into actual record as soon as you launch your first clip or scene. Make sure you use your controller to be creative with device settings.



- 16** Feel free to experiment while recording. You can even drop in new devices during recording, and Live won't flinch. Use the Overview (Alt+Cmd+O) for a heads-up of what your tracks are doing.



- 17** You can also use your Tab key to switch between Views, again, while still recording. You can watch everything drawing into the timeline, including automation. There are no rules about how long to play – that's up to you.



- 18** Stop Live, and save your set immediately. In the Arrangement View, click the orange Back To Arrangement button, and use the transport controls to review your jam. Not perfect? Don't worry as next time we're editing!

→ hear a count-in of your chosen length before the transport begins rolling. If not, it'll just go straight into action, unless you right-click on the record button, in which case it waits until you launch a clip or scene before recording starts. You can also enter record at any time, when Live is already running. It's a good habit to get into double-clicking the 'stop' button before recording, which sets the counter to

1.1.1 and avoids you getting any bars of silence at the beginning of your take.

Now that we have our arrangement mapped out, next time we'll go on to look at our editing options. In the meantime, I suggest you keep playing around with Scenes, explore Live's automation recording, and experiment with your hardware controller. **MT**



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20

EQ tips

The EQ stage of mixing is vital in finding space for each instrument, making important moments punch through and eliminating clutter. Here's our guide to getting it right...

01 WATCH THE VERY TOP

A common procedure when editing or mixing audio is to try to get rid of hiss on recorded audio tracks. These very high frequencies can often be found between 5kHz and 20kHz in the frequency range, depending on the material, so applying a high-cut filter with a narrow Q value should enable you to knock out the hiss while leaving other high frequencies that you want to keep intact. As ever, this is a matter of careful experimentation. Systems such as Dolby Noise Reduction used to get rid of hiss, but also usually made the whole track sound dull as a side effect. Since digital files don't suffer from the same physical problems as tape, you can be fairly sure that if you get your top end sounding clean, it should be reproduced as such whatever it's played back on.

Vocals need to cut through a mix, or at least be prominent and audible, and **EQ is key to this**



02 CONTROL YOUR BODY

More than any other tool, EQ is able to control the 'body' of a sound. Compression can play around with levels and presence, but to control the weight of a sound it's usually to EQ that you will turn. For some parts, this means reducing bottom end and lower mids to reduce clutter in the mix, and for others it's about adding weight by increasing those same frequencies.

03 ADD BASS WEIGHT

To add weight to a track, try looking around the bottom end of the spectrum, gently boosting with an amount of around 10dB as you move around, until you find a point that seems to add the most body. Then find a frequency either double or half that value – so if it was 110Hz, go to 55Hz – and add a dB or two of boost there as well.

04 IT'S THE ENSEMBLE THAT MATTERS

In a dense or complex arrangement, you may well find that two or more elements of a track are fighting to occupy the same frequency space. It might be impossible to EQ them to sound the same as they originally did and still make enough space for both of them. One trick is to EQ them in slightly different directions while keeping them sounding good in the context of a track. This doesn't necessarily have to be extreme; for example, you could make one guitar part more bass-heavy and one more top-heavy. Solo'd up, they might sound odd, but the main thing is that they sit well in the context of the track. If there are parts of a track where a

sound plays solo or with less accompaniment, you can always automate the EQ to behave differently at those points, or duplicate the track and treat it separately.

05 UNDERSTAND VOCAL REQUIREMENTS

Vocals almost always need to cut through a mix, or at the very least be prominent and audible, and EQ is key to this – along with compression, of course. There are some good rules of thumb to observe. A lot of male vocals will, prior to treatment, have too much bass end on it to sit well in a mix, so rolling off some of this is usually a good tactic. A vocal that is too nasal or top-heavy, on the other hand, might benefit from the addition of some lower mids, and perhaps even bass. As vocals can sometimes vary over a large part of the frequency spectrum through the course of a song, you need to pay particular attention to their EQ. Multiband compression can also help to control unexpected peaks if a single band compressor isn't quite doing it.



Consider muting the EQ from time to time to remember what you are adding or taking away

06 PRE-TREAT CERTAIN SOUNDS

When you are recording certain sounds, particularly vocals, it can be advisable to do a little EQ'ing on the channel into which the vocal is going to be recorded. Close-up vocals, in particular, can sound boomy in the singer's headphones and lead to them not performing to their full potential. Knocking some bottom end off will help their vocal sit better in the headphone mix. Remember, however, the difference between doing this using a software channel strip where the EQ is not part of the take, and thus can be changed afterwards, and on your mic pre or interface, where the changes are a permanent part of the recording. It's usually wise to record relatively clean and then EQ afterwards, but if a sound is particularly problematic at the low or high end, for example, it doesn't hurt to mitigate this prior to recording.

Use an EQ like this to accurately remove high frequencies (far left)

Different vocals have different EQ requirements; male vocals might need the bass reduced (above)

Similarly knocking the bottom end off a vocal might help it sit better in headphones (top right)

07 ORDER MATTERS

As with any effect used as an insert, the point at which you apply EQ can have an effect on the end results. Imagine you applied an EQ that cut out a lot of bottom end, and then in the next insert slot applied a compressor. That would cause the compressor to behave in a specific way because it would be compressing a signal without much bass end. If the EQ was applied after the compressor, the EQ would be working on the compressed sound – the full frequency spectrum – rather than the compressor working on the EQ'd sound. The differences can be subtle or more noticeable, depending on the plug-ins you are using. If you are using EQ in your DAW's mixer, rather than as a plug-in, be aware of what path the signal is taking on its journey from timeline to speakers.

08 COMPARE AND CONTRAST

When it comes to getting a production right, you'll do a lot of tweaking. Many EQ modules give you the ability to A/B between two presets, and sometimes as many as four. With almost any effect used during music production, this can be a really helpful thing to do, as it lets you non-destructively audition different treatments and flip between them. After extensive periods of listening, your ears get used to the way something sounds, and so sometimes a fresh perspective can be helpful. Consider, also, muting the EQ from time to time to remember exactly what you are adding or taking away from a part. EQ presets, whether in the form of plug-in or track presets in your DAW's mixer, are also a good way to try different treatments while being able to roll back easily.

09 GET UP CLOSE

Between about 4 and 6kHz, you will find frequencies that control the clarity and 'up-front' quality of a track, so boosting in this range can make the music seem closer to the listener. At the very top end, from 6 to 16kHz, you get the 'air' that can be used to add sparkle to tracks. Pushing the very top end too hard can result in sibilance on vocals, or too much hiss, so be careful. Some EQ plug-ins even have an "add air" preset.

10 INVESTIGATE CHANNEL STRIPS

All major DAWs feature EQ of some description on channels, often in the form of a channel strip. These usually contain some handy presets that you can dial in quickly to see how something will sound. One good use for this is to pull up a 'telephone line' or 'old radio'-style EQ setup to quickly alter the sound, rather than having to spend time working out for yourself how such a curve might be set up. You can flip through presets to quickly audition different treatments; of course, every vocal is different so it's unlikely a preset will be perfect from the get-go, but it's usually a great starting point.



Some third-party plug-ins take the form of channel strips, notably Izotope's Alloy and various models from Waves.

11 GET IN THE Q Many EQ modules, particularly parametric models, have a Q control for EQ points, and this is just as important in tailoring the character of the EQ as setting the frequency. Q controls the width of the EQ curve, and hence how much of the area around the frequency point is affected. With a narrow Q, one example of which would be a notch filter, only a very specific frequency is affected – and this makes it good for trying to pinpoint individual sounds within an audio signal. A wider Q value, on the other hand, affects more of the frequencies around the main EQ point, often tailing off gently. This is better for pulling a broader frequency range up or down. Narrow Q values are often used for

more surgical EQ, whereas gentler Q values are used commonly in mastering.

12 LESS CAN BE MORE Different EQ modules and plug-ins have different numbers of bands, and when they do you can often switch different bands on or off. Normally, you might find anything from two to 30 bands available to you. There are cases where

Channel strips are worth using for their presets (top left)

Pinpoint specific frequencies with a narrow Q (below)

For mastering you may want to drop the bottom end to hear the rest (above)



you need to be specific and try to isolate a certain frequency that can be found only by using a 30-band model, but more often than not, around six might be a good number to use. This stops you from over-complicating what need only be a fairly simple task. Sometimes, you might only need to use a high or low shelf, which involves just one EQ point, for the purposes of rolling off top or bottom end. When you start getting into 30-band territory, it can be overkill.



13 STRIP IT BACK When EQ'ing a whole track during mastering, some people like to start by knocking off the bottom end so that they can hear the middle and top in isolation. They adjust the lower and upper mids to get the sound good and firm, and the top so that it is bright but controlled. Then, bringing the bottom end back in will bolster the overall sound and you can EQ it accordingly. This stops you focusing too much on the bass end all the way through the EQ process. Of course, the end goal is a perfectly balanced sound, and how you go about it is less important than achieving it. Remember not to use EQ to compensate for volume – that should be done with compression, or multiband compression if necessary.

14 MAKE SPACE FOR COMPETING SOUNDS When EQ'ing during mixing, there are tricks to make elements in a similar frequency range sit together. The kick drum and the bass are two things that often get in each other's way, so you could try cutting one at a specific frequency and boosting another at exactly the same frequency. You need to try to avoid situations where you have two EQ modules boosting at the exact same frequency. Ideally, you should create a space for each instrument to live in within the mix. Sidechained compression can also be used effectively here.

15 GET DEEP DOWN Sub bass lives between around 16 and 60Hz, and these sounds are often felt more than heard. Too much emphasis on them can make a track seem muddy and confused, so if this is happening, try using EQ to roll them off. Regular bass is somewhere between 60 and 250Hz, so playing around with these frequencies can add weight to the track or thin it out a little if it is sounding too boomy.

16 KEEP IT SIMPLE A lot of virtual instruments have EQ controls on them, and it's important to remember that any presets you use may already have EQ applied. The same goes for presets on other effects plug-ins that you may have called up on other tracks. Try to EQ in as few places as possible, as this keeps the signal path a little simpler, and if you are troubleshooting it means fewer places to look to find a culprit.



Some EQ modules let you **set the shape of the EQ curves** applied at **different frequencies**

17 UNDERSTAND CURVE SHAPES

Some EQ modules, such as FabFilter's Pro-Q, let you set the shape of the EQ curves applied at different frequencies. These let you quickly dial in EQ characteristics without having to play around with lots of dials. The most common types of curves are bell, high and low shelf and high and low cut. By mixing and matching curve types on different frequencies within a single EQ module, you can more precisely control the character of the sound.

Know your EQ types (above right)...

Some instruments have very usable EQs built in (above)...

Getting hands on with an EQ controller is beneficial (below)

18 CHOOSE AN EQ TYPE

Parametric EQ is the kind that may come as part of your DAW, and offers a number of bands and usually the ability to draw in EQ points with the mouse and make Q settings. Graphic EQ is more often – though not exclusively – found in hardware form, and features a large number of physical sliders that can be used to control the shape of the sound. Linear Phase EQ is found only in software form, and allows EQ'ing without colouration of the sound.



19 MASTER THE MIDS

A lot of information in music exists in the mid range and it's important to understand the difference between lower and upper mids. Simple EQs sometimes have a single mid control, but having two or even three for different parts of the mid range is much more flexible. You can generally set the crossover points of these sections on a more flexible EQ unit to tailor the boundaries to the material you are working with.

20 USE HANDS-ON CONTROLS

Some EQ plug-ins can be made to learn from MIDI input, and where this is available you can connect a MIDI control surface and assign knobs to the EQ dials. While playing back, this would allow you to tweak EQ points and curves by hand, which can feel much more natural and intuitive than using the mouse. Some control surfaces are designed specifically for tasks such as this. **MT**



Technique Mastering Part 1

Mastering Part 1: Wrangling!

In the first of a six-part series on mastering, **Mike Hillier** takes a look at the frequency domain of the mix. Check out the **accompanying video** on this month's DVD too...

EQ is the workhorse of the mastering engineer. Get this right and everything else usually falls into place. But it's not simply a case of knowing what frequencies to boost and what to cut, it is also important to know when in the signal chain to cut and when to boost – and with what tool...

Getting your EQ cuts in early in the signal chain is usually the most useful approach, as this lets you balance out the EQ curve, removing any frequencies you don't want, and will often get you most of the way to your finished



But don't rely on visual tools, use your ears and isolate frequency bands with a band-pass filter to try to get an idea of what each frequency range is doing.

The idea is to remove as many of the problematic frequencies as possible before you hit any compression or harmonic saturation stages in your signal chain. It is unlikely that we want the compressor to respond to frequencies that we are later going to remove, or similarly, for a saturation tool to add harmonics to frequencies we are later going to remove. There are, of course, many occasions when this is exactly what we want. For example, it can be useful to add harmonics to a sub-harmonic sound that we are going to reduce, as this way the harmonics produce the psycho-acoustic impression of a loud sub-harmonic source, without you having to use a considerable amount of energy in the mix for that source.

We're going to save mid-side EQ for another workshop, but we will usually work on this part of the process at the same time as our initial stereo EQ processing, enabling us to tuck some

Getting your EQ cuts in early in the signal chain is usually the most useful approach

master. We usually use a high-quality digital parametric EQ with a good visual interface and at least seven bands for this task. There are many great options for EQs, but you could easily use the built-in EQ in most DAWs, such as Avid EQ III. Listen closely, and if you hear any frequencies jump out of the mix, try to tame them with this EQ.

A good spectrum analyser can be helpful for quickly finding the frequency, and is often found built in to the EQ.

USE YOUR EARS

There's no such thing as a universal useful mastering EQ preset. Every single mix has to be listened to in context, and the specifics of that project dealt with. Some mixers will add too much low end, while others will give the track too much air. Some will mix through their own mix-buss EQ, while many will leave it flat. Instead, rely on your ears to tell you what each mix needs.

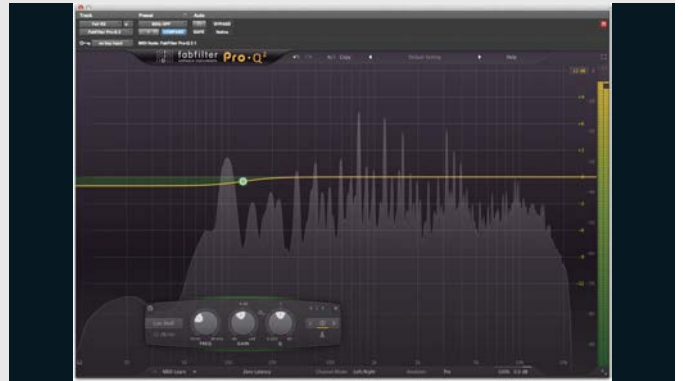


Example track

For this workshop, we're using the song *Fall*, from Emma Ballantine's *The Tourist* EP, available at <https://emmaballantine.bandcamp.com/album/tourist>. The EP was recorded at Monnow Valley Studio with producer Peter Waterman, and mixed by Warren Bassett. For more information, visit www.emmaballantine.com

MT Step-by-Step Apply EQ to your track

01 *Fall* starts with a solo acoustic guitar, and slowly builds up to a more full arrangement as it progresses. There is very little sub-frequency information at all, but a build-up of low-end around 100-200Hz.



02 With no kick drum to occupy the low end, the guitar can fill out the bottom, but it gets a little overbearing, particularly when the arrangement builds up, and the guitar has to share spectrum with the cello. Try controlling this bottom end with a low-end shelving EQ.



03 The shelving EQ works on the guitar, but also pushes down the cello, especially when it occupies the bass frequency range. Instead, try a bell-shape curve, to pull down the fundamental frequencies of the guitar without affecting the bottom of the cello.



04 With the bottom end tightened up, a slight metallic ring becomes quite present in the guitar part. A tiny adjustment around 6kHz should help to bring this back under control.



05 We're going to add the high-frequency shelving EQ now, but leave any adjustments until we can hear what effect the compression has had on the overall tonality.



06 This mix doesn't need much in the way of compression, as the mix already sounds quite controlled, so the compressor isn't going to do very much work. We may even choose to leave it off entirely, or simply keep it in place for harmonic reasons.

frequencies in towards the centre while widening others, all before we hit any compression.

Boosts are usually kept until after the compressor, which means that at this stage you have to add and set your basic compression settings. Again, we'll look at this in detail in a future workshop, but listen closely to how the compression alters the harmonic content of the mix. You may discover that your mix starts to lack a little top end,

which can be boosted either before or after the compression stage, with slightly different results. We like to use an analogue, or analogue modelling high-frequency shelving EQ for boosting the high end. Passive EQs, such as Pultec clones, are a popular choice, but we've also had great results with the Dangerous BAX EQ and the Kush Audio Clariphonic, both of which have DSP equivalents. In principle, this curve is only added to adjust for the response →

→ of the compressor, but in practice we are likely to add more, or sometimes less, depending on the overall tonality we are aiming to achieve for this master.

After the compression, we will add another EQ, or perhaps go with the one we're using for the high-frequency shelving boost, to adjust the overall tonality of the mix. This usually involves subtle boosts and cuts to gently fashion the mix into the shape we want. Again, our preferred choice of

EQ here is something with a little analogue character, because usually these require smaller boosts to achieve a similar goal. **MT**

Mike has produced a screen-capture video to accompany this feature which you can check out on this month's DVD. He uses Emma Ballantine's track Fall in his example, and applies EQ in real time to various parts of the track so you can see and, more importantly, hear his processes in action. Mike will be producing more videos like this to accompany all six parts of this series.

MT Step-by-Step Apply EQ to your track... cont'd



07 Now go back to the high-boost EQ and make any necessary changes. This will also help you to get an idea of how the compressor is going to respond to the boost.



09 The midrange on the Massive Passive is incredible, capable of massaging just about any mix into shape. One or two small adjustments between 800Hz and 3kHz can make an enormous difference to the final tonality.



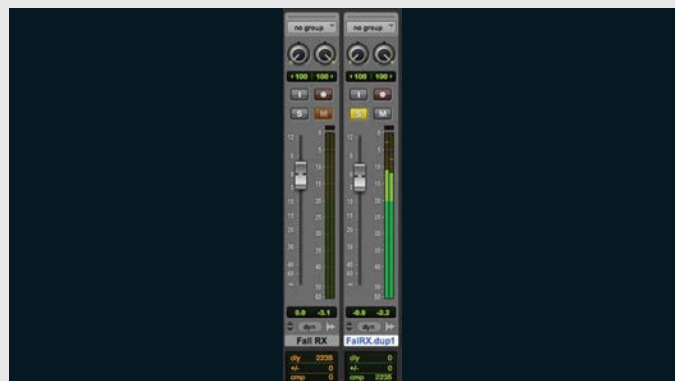
11 Finally, we're going to compare the various filters on the Massive Passive to see if they help to bring any focus to the mix. There isn't much sub-frequency energy, so the bottom end won't make much difference here.



08 The final compressor we're going to add is going to have a fair amount of colour for shaping the final EQ curve of our master. The UAD Manley Massive Passive Mastering Edition is one of our favourite tools for this task.

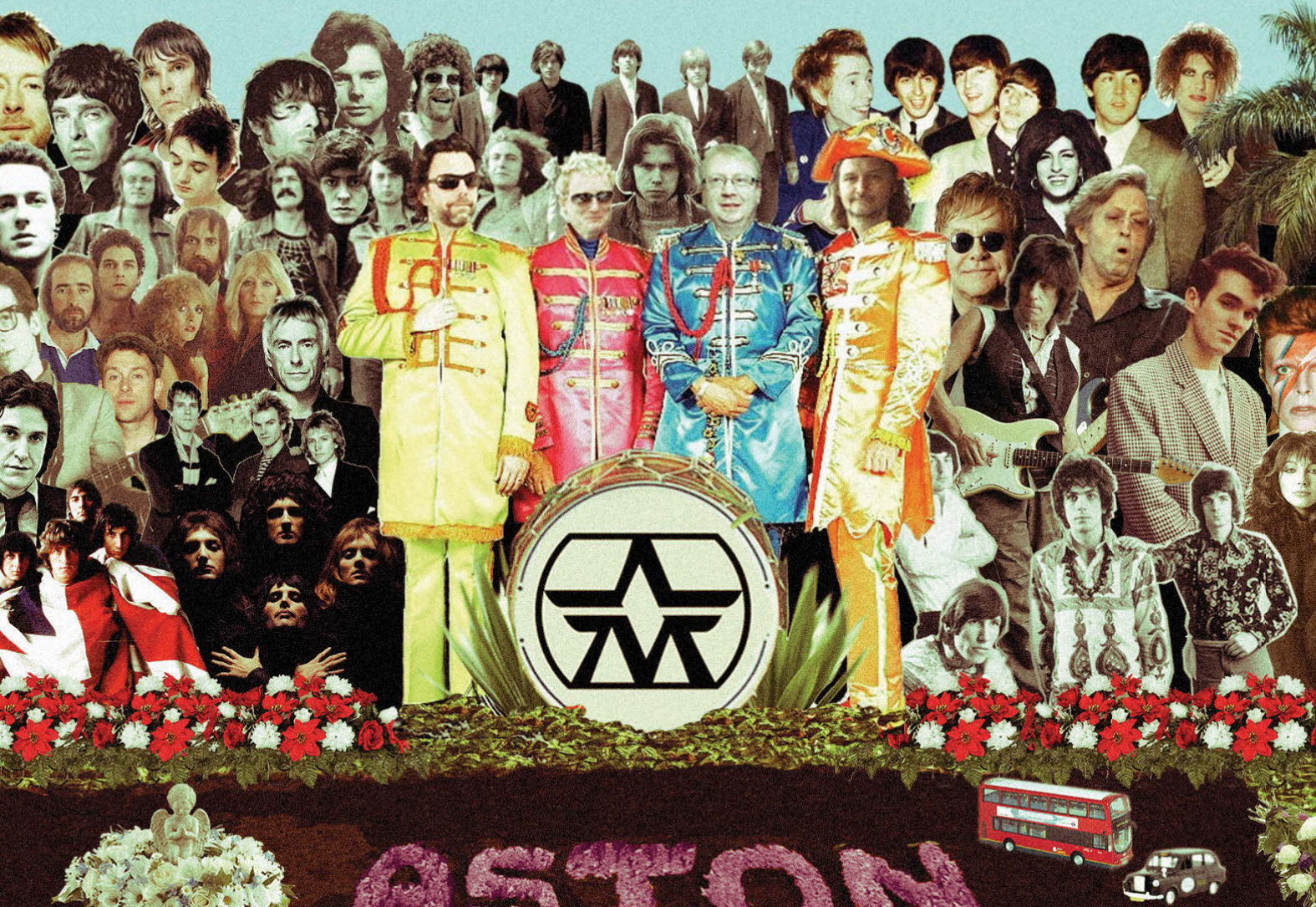


10 Sometimes a second shelf cutting above the boost of the first shelf can help to lift the upper harmonics without adding too much air, and will really help to bring that elusive warmth to a mix.



12 EQ can be incredibly difficult to get right, and often you may think you are improving a mix when you are, in fact, simply making it louder, so be sure to always check your master against a level-matched unprocessed version.

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MT Workshop Beat Programming And Sound Design

Working with REX files

REX files are amazingly flexible, no matter what DAW you use. **Hollin Jones** digs in and explains how to get the best from REX...

Requirements

Our Beat Programming and Sound Design feature is illustrated using Reason but you can apply the principles to whatever DAW you use.

You may not know that Propellerhead invented the REX format. ReCycle was one of the company's first major software releases: a standalone application for analysing and slicing up audio loops and saving them in a format that had significant advantages over regular digital audio at the time. REX loops are MIDI-triggered, sliced audio files that can change their tempo dramatically without altering their pitch – and their slices can be picked up, manipulated and rearranged. That might seem normal now, but in 1994 when it was invented, it was revolutionary. So much so, in fact, that REX files are now supported by many other DAWs, either in a dedicated player module or with the ability to be placed on a regular audio track. Reason's implementation is arguably the most elegant, however.



This is great for live performance, especially with a control surface hooked up and locked to the module, letting you trigger loops live just like a real sampler. It's also good for recording, since you can capture all the program changes easily, and then edit the results afterwards by simply fiddling with a bit of automation data. To record changes live, simply press Record in the Transport, and as the project plays make your changes to the REX slots. You will see that even though no note data has been recorded in the sequencer, pattern change automation data has appeared, and this can be edited by dragging the borders of the clips and also clicking to reassign the slot used for any clip. The slot area also gets a green outline to denote that it has been automated. To suspend the automation, you could simply deactivate the Pattern Select automation lane for the module and it would return to its original state.

Pieces of eight

One of the great things about the Dr Octo REX is that it has eight slots, as opposed to the one of the original, meaning it can do the work of eight of the old modules. This has various benefits, not least of which is its ability to be used as a live performance module both for gigs and for more creative playback during recording. Try, for example, loading up a multi-patch from the sound bank, or loading a number of individual loops into several of the slots.

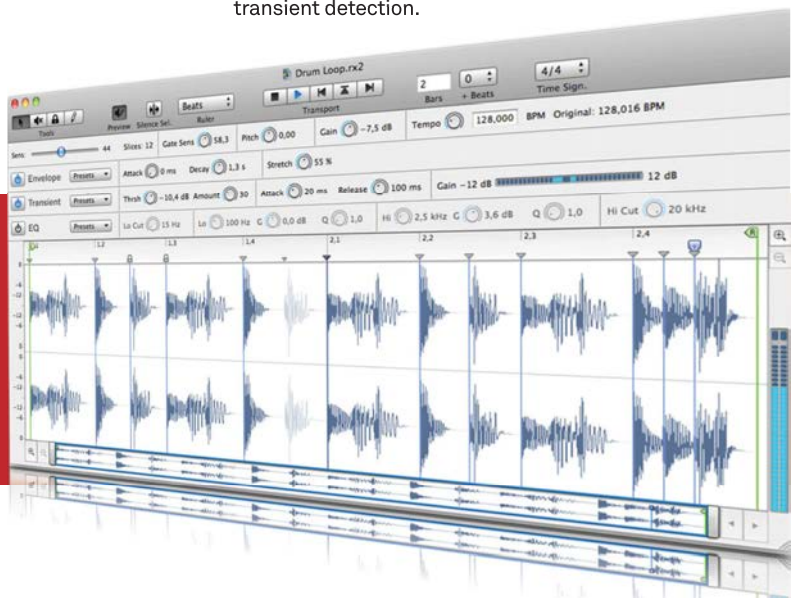
Look to the left of the front panel and you will see a section called Trig Next Loop with three buttons. This controls the interval at which the next loop is triggered when its button is pressed. So try pressing the Run button and then flipping between the loops during playback. By default, this is set to switch after a loop has completed playing using the Bar setting, which is the most seamless method because it avoids unexpected jumping. If, however, you want finer control over switching loops, change the setting to either Beat or 1/16 and you will be able to switch more quickly.

Make your own

One particularly nice thing that Reason 8 does, which is not generally found in other software, is automating slicing of all audio in the sequencer, rendering it elastic. A side effect of this is that if you right-click on any audio event and choose the Bounce options, you can send the sliced clip directly to a REX player module as a ready-made REX file. So, imagine you had recorded a guitar riff, a vocal or a drum part. By sending it to a REX module in this way, you could instantly make it 'playable' and create a live mash-up of the part, all without having to export it first. It's a great timesaver, and works especially well with rhythmic parts, since the audio analysis relies quite heavily on transient detection.

FOCUS ON... RECYCLE

ReCycle is actually still available for purchase, though it doesn't support older computers anymore, and older versions won't run on newer machines, so you'll need to check compatibility before you decide anything. Although ReCycle is still a cool bit of software and helps to create advanced REX files, the capabilities of Reason 8 let you do some of this work without it. If you bounce any audio clip to a REX file, as described in the workshop, it appears in the sample pool in the browser. From there, you can right-click on it and choose to export it out of Reason, at which point it becomes a fully independent REX loop. This is a little slow for creating multiple loops or collections of loops, but it's fine if you're doing a smaller number.



MT Step-by-Step Working with REX files

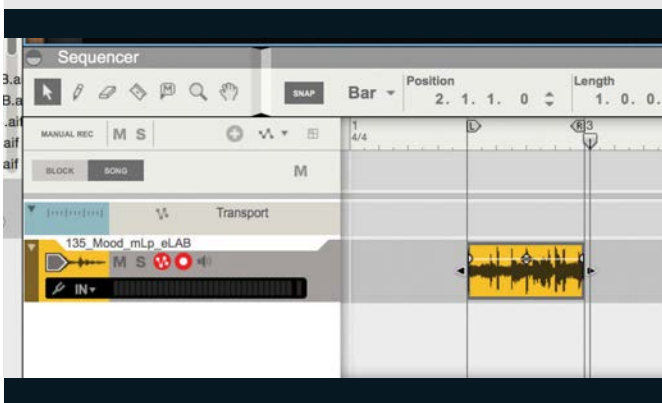
- 01** To place an instance of a REX loop into the sequencer, select the slot on the module itself, and then from the Edit menu choose Copy Loop To Track. A copy of the loop will be placed between the left and right locators.
- 02** Expand the Programmer section and you will be able to view the waveform of any of the eight loops in the slots. You can set a master volume and transpose for each loop individually by using the knobs at the top-right corner of this section.



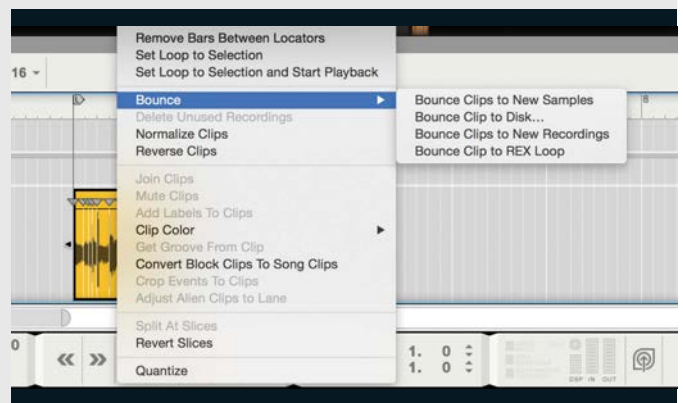
- 03** Select any of the slices inside the waveform display and the row of controls underneath can be used to tweak any slice individually. Use these to make loops sound much more interesting without doing much work.



- 04** Press the Slice Edit Mode button and for the selected slice you get an envelope window for any of the available parameters. Use this to draw in time-based changes, such as filter sweeps or volume curves to any individual slice.



- 05** Here, we have an audio loop that has been dragged into a project, and we are going to turn it into a REX file with just a few clicks, and without having to export it from Reason first. Make sure it is time-stretched to fit the project before the next step.



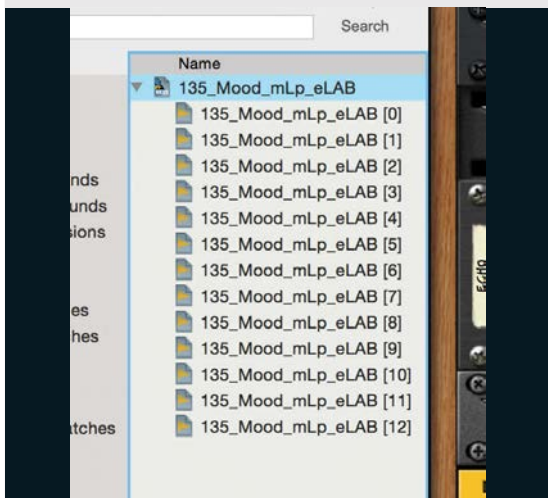
- 06** Double-click on the audio clip to open it in Edit mode, and you should see the audio slice markers that have been automatically created. Right-click on the clip, and from the contextual menu choose Bounce > Bounce Clip To REX Loop.

Once REX data has been copied to a sequencer track it can be manipulated in all sorts of other ways, though these are tricks related to the sequencer and not to the module itself, which simply obeys the note data it is fed. It's worth knowing that the REX lane is very powerful. As well as picking up slices and rearranging, deleting or duplicating them, you can take advantage of the automation capabilities of the

sequencer by automating things such as Notes To Slot, transpose and a wealth of other parameters. Click on the Track Parameter Automation menu to see what can be automated, and then use the pen tool or move parameters while in record mode to add automation. Just as with other modules in Reason, this is a great way to add interest, movement and dynamism to your sounds.



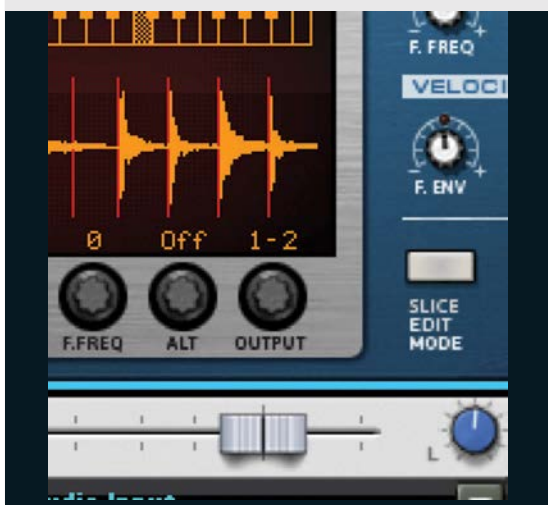
MT Step-by-Step Working with REX files (cont'd)



- 07 (Left) When you do this, Reason creates a new self-contained loop, and it appears in the browser at the top-left of the screen. If you expand the loop, you can see each of its slices and audition any of them by clicking on it in the browser.
- 08 Create a new Dr Octo REX and reset it if necessary. Go to the Song Samples tab of the browser and locate your REX loop. Drag it into the module in the rack and you will find your loop is a fully-fledged REX file, with all the flexibility that entails.



- 09 Here's how to process slices of a REX loop separately. Call up a loop with a decent number of slices and then spin the rack around. Create a new effect module attached to an audio track.
- 10 Now connect slice output 1 to the audio input on the audio channel module, with the effect attached as an insert. The output routing should be taken care of automatically. Then spin the rack around and go to the REX module.



- 11 Select the slice you want to route out and go to the slice edit window of the Programmer. Turn the dial to send it to outputs 1 and 2 and you should hear the slice now processed through the effect during playback.
- 12 You can keep going, adding more effects modules to new audio channels and sending slices to them. In this way, you can create a cool multi-effected drum kit while maintaining total flexibility to keep editing the MIDI part in the sequencer.

→ Hear me roar

For any Reason user, REX loops are a brilliant tool for spicing up your productions, whether used for creating backing tracks or mashing up existing sounds. Even if you use an alternative DAW, REX loops offer some distinct advantages over regular audio files. They can be tempo-stretched pretty far, and individual slices can have their own settings for pitch,

pan, reverse and even which output they are sent to, meaning you can process different slices of the same loop through different effects for a truly complex sound.

Creating your own sample collections for sale in REX format means they will appeal to a wider audience. If you haven't investigated the ins and outs of REX files, now is a great time to start. **MT**

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MT Lead Review

Hardware ■ Software ■ Mobile tech ■ Accessories

YAMAHA reface



Yamaha's reface range of keyboards is just about the most exciting set of instruments that the industry giant has released in years. **Andy Jones** does an about face...

Details

Price
Each: £347
(street at £289)
Contact Yamaha UK
0844 811 1116
Web
yamahaproaudio.com

Of the three Japanese music technology legends that are Roland, Yamaha and Korg, Yamaha has been the quietest over recent years. It could well have been concentrating on its engines, or motorbikes, of course, or even clothing... who knows? But Korg, and even Roland, have both stolen the headlines at music gear trade shows over the last couple of years. Those headlines have largely been of the Japanese giant revisits glory years to release amazing new keyboard variety.

Not to be outdone, Yamaha finally announced its own headline-grabbers at Abbey Road a few weeks ago: the reface keyboard range. This was a lavish launch by anyone's standards, and Yamaha has clearly put a lot of thought and effort into them. The company even had its own secret room at Musikmesse in Frankfurt this year – into which I was lucky enough to be invited – and the demo of the keyboards blew me away at the time. Not, I hasten to add, because of the keyboards *per se*, but because the demo thoughtfully included a blend of Cocteau Twins and Lorde and, more importantly, *didn't* include the intro to Van Halen's *Jump* – surely the most played demo music at any trade show of the last 22 years, all of which trade shows I have attended, and all of which demos I have ruddy well heard... I note this as it's an important factor in the reface launch.

These keyboards are not just revisiting the past, although that is obviously a big part of their appeal, but very much intended to be for current musicians – younger ones at that. This does cause a bit of a culture clash – or, more correctly, a generational clash – in one or two of them, as we will see; and before I even begin the review, I'm wondering if they are more 'mass

the CS-80. Got £20,000? You *might* just be able to get one.

Then, you get the CP, an electric piano mini keyboard, which Yamaha describes as 'a spiritual successor of the unique Stage Keyboards of the 70s'. Finally, there's the YC, which completes the range with organ sounds and controls. So, we get the four pillars of keyboards represented in reface –

Not just revisiting the past but intended for current musicians, which does cause a clash...

Key Features

- Keyboard: 37 mini-key keyboards
- Polyphony: 8 notes for CS and DX; 128 for others
- Voice engine/shapes/presets: CS (analogue modelling/5/0); DX (FM/12/32); CP (Modelled + AWM/6/0); YC (AWM/5/0)
- Connectors: DC in, headphone, 2x phone out, pedal, USB, MIDI In & Out
- Speakers: 2x2W
- Size wxdxh: 530x175x60mm
- Weight: 1.9Kg

market' and less 'specialist studio gear', so let's see...

Fab Four

The reface launch was in The Beatles' old studio at Abbey Road to emphasise the heritage that all four of these keyboards exhibit. Possibly the most obvious to *MusicTech's* readership will be the DX: a mini keyboard containing those classic 80s synth and keyboard sounds (and more, as we shall hear). The CS is another synth, this time analogue in nature and based on that most legendary Control synthesiser engine, found in one of the most sought-after second-hand synths available (or not as the case may be),

digital synth, analogue synth, piano and organ – and four big slabs of Yamaha history. It's a solid and simplistic story so far...

Mini keys, max controls

The reface range is truly portable in that it is battery-operated – an external PSU is also included – and you get a couple of onboard speakers on each. These are loud enough for indoor noodling, although do rattle a bit when pushed, especially with the CS synth.

There are a couple of other factors that had the internet buzzing when reface was announced, and not always a nice 'bumble bee' buzz – more waspish if I'm honest. You'll have

noticed I've used the phrase 'mini keyboard' a few times already, and there's no getting away from the 37 mini keys on each model. Some commentators have been personally insulted that Yamaha has included them, but I like to take a more level-headed opinion. As I begin to review the range, I have several other keyboards in the studio to compare and contrast, each with wildly different keyboards. A Nord Stage (admittedly at 10 times the cost) has an incredible hammer-action, full-sized keyboard. Roland's System-1 is designed for EDM users and has bigger keys, but a frankly shocking action. The new ARP Odyssey has the same kind of keyboard as the reface range, but as a duophonic synth, this hasn't bothered me so far. I'd say that the size of key is not as important as the action – the System 1's are bigger than the refaces' but less

expensive, especially for the models in the range that come up against some serious synth competition at that price. Again, we'll come back to this.

What is good is that each keyboard has terrific controls that can be tweaked by hands, whatever their size. The YC has drawbars; the CP some amazing effects; the CS a whole bunch of synth controls; and the DX some hands-on touch strips that allow control over DX sounds that people in the 80s could only dream of.

The DX7, on which this is based in both looks and sounds, was the ubiquitous synth of the 80s and sold gazillions, but was, by everyone's account except Brian Eno's, the biggest pain in the arse to use – ever. The reface DX, on the other hand, has some of the features that the DX7 hid away under a very thick hood, on hand for everyone to play.

/// I'm going to have **to explain FM synthesis**, something I've spent the **last 30 years trying to avoid** ///

playable, for example. The mini keys on these refaces won't suit everyone but, as with the Odyssey, as I play I'm not finding myself hindered. We'll return to this more fully as I conclude the test.

The other bone of contention is the price, and if the retail is to be the £347 announced at launch, then that is too

1. The reface DX

As we're talking DX, let's start with this keyboard, as I'm sure it's probably the one that has a lot of – if not most – *MusicTech* readers excited. An easy DX is what Yamaha is promising here, if such a thing is possible... Before we go into the sound, I'm going to need to

explain a little about FM synthesis – something I've spent the last three decades trying to avoid doing. I'll keep it simple and brief, though. FM (frequency modulation) synthesis is based on a fundamental waveform modulated by other waveforms to produce new sounds. Both types of waveform are generated by operators, the fundamental by a 'carrier' operator, the modulating ones by 'modulators'. Easy! The reface DX has four operators, each of which can be a carrier or modulator.

The combinations (algorithms) of these are the key building blocks to each sound on the reface DX. There are 12 possible combinations, and as you step through the presets, the algorithm is shown handily beneath the name, so you will eventually pick up what you can do with each sound. For a start, you can change each preset's algorithm to another of the dozen on offer, and this will usually result in something dramatic. It doesn't change the sound radically, more tonally, but it's a great starting point to your FM synthesis adventure, and is done using the touch strips in the centre of the unit.

DX touch

You get four touch strips, which act as the main parameter changes for pretty much everything on the DX. On the 'top level', they will adjust up to four parameters within the FM menus to the right of the screen. You get Algo to adjust the aforementioned operator algorithms (one slider selects from 12); Freq (four sliders adjust the frequency →

reface DX front-panel overview

a **MAIN CONTROLS**
The Pitch Bend, Volume and Octave up/down sliders do as you'd imagine, with the Octave slider graduated for accuracy.

b **TOUCH STRIPS**
The heart of controlling the DX. Read the instructions on using them. They are easy, and using them will become second nature (and essential).

c **FM**
The main menus for editing with the touch strips include Frequency, Level and the 12 algorithms for the four FM operators

d **VOICE SELECT/EDIT**
Select the presets from the four banks and more operator parameters, again tweakable via the touch strips.

e **LOOPER & EFFECTS**
Plug in your mini jacks here from the SQ1 and then the jack outs into the Patch panel. You can also process external signals here.



reface CP front-panel overview

a MAIN CONTROLS

No Pitch Bend, but Volume and Octave up/down sliders are to the left of the dial to select one of six 'preset-ish' electric piano sounds.

b DRIVE

Push this for a little overdrive on your sounds, more prominently on the 70s electrics. It adds a touch of warmth and distortion.

c MAIN EFFECTS

Select between two effects over three sections (or none), and each section has a depth and rate, speed or time dial as well.

d REVERB

Simple but effective, like everything on the CP, the reverb dial just adds glorious space to the whole CP electric sound.

e PLAYABLE KEYBOARD?

Give it a try. You might be surprised at how these mini keys perform. Small does not always equal bad and big does not always mean good when it comes to keys...



→ of each operator); Level (adjusts each operator level); and FB (the sliders adjust the feedback of each operator). So the main parameters of FM synthesis can be accessed easily at this stage, but press the Edit button and you can access even more operator parameters, including envelope waveforms and LFO, and adjust these with the touch strips as well.

So these touch strips are key to hands-on, real-time control and all of the sound-sculpting capabilities of the DX which, when you get into it, are pretty decent, all things considered. So using these strips is also key and might take a little getting used to... until you read the instructions, that is.

At the launch, I struggled with the touch strips a little, but having now read the manual, they are actually very easy to use. Tap up or down for a small increment change in value. Hold for this value to repeat. Swipe for bigger changes either up or down. Once you know how, it really is easy, trust me!

And you really have to get to grips with them, because the strips are used further on a global scale for adjusting System, MIDI and note-playing parameters, and also effects. These and other extras we will come to after I cover the all-important sounds.

DX sounds

OK, so after my quick lesson in FM synthesis, here's a recap of the sound that it produces. Think bells, think pads and think pianos. Percussive sounds? Yes. Great atmospheres. Yep. Dubstep? Er, I'll come to that...

Back in the 80s, the DX7 really set the scene for music; if there was an electronic keyboard that shaped music making, this was it, from its distinctive piano sounds through to some shimmering pads – but down mostly to its great percussive, fast attack-like presets. Those bell sounds were made for the Cocteau Twins – and the dark, atmospheric pads were the backdrop to many a student goth night (or they were round mine anyway...).

Stepping through the 32 presets on the reface DX is like stepping back to this time... at least to a point. The electric piano types are superb – I love the authenticity of the LegendEP and the dirt of the BleepClv. The lead sounds

GlassHarp, and then step to the next one up, the aptly-named Chopper, only for a searing electric saw sound to rip through your speakers. There's a bit of drum 'n' bass swelling here, a bit of dubstep growing there... all the sounds I really don't remember the DX being good for back in 1988, and not welcome to these ears.

Yes, I get that you can produce these sounds with a DX engine, yes I get that they are popular, and yes I get that (and this pains me) *I am in my 40s* (bloody late-40s, OK?). But my understanding of dubstep is that swelling basses and filth are best found on analogue synths, preferably synths that no one else has heard of, not on a DX keyboard

Playing the **reface DX** really is like stepping back in time to the 80s. To a point, anyway...

are incredible, too. UniLead can really screech when you use the touch strips on the Freq menu – I mean *really*. The pads are amazing, too. GlassHarp is inspirational, and with CloudPad I was simply stepping through the algorithms and I wanted to save the sound every time, so good was each variation.

I can't say – and I really don't want to sound like my dad here – that I'm that enamoured by the more up-to-date and in-your-face presets, though. You find yourself lost in a wonderful pad such as

produced for the masses. Luckily, the touch strips make creating something else from these presets damn easy and damn quick (which I was sorely tempted to do on all of them), and I'm sure that Yamaha will come up with an original bank of sounds just for me, that gives me more of the original and less of the corporate modern. Maybe they could call it the Old Duffers bank while they're at it.

Anyway [calm down, think about clouds – ed], just a quick finish on the

→

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→ DX, as I know I've spent far too long on it, and there are a couple of other features worth noting. The Phrase Looper lets you record up to 2,000 notes, or 10 minutes' worth of notes. It really is incredibly easy to use, again with the touch strips, but you do lose your looped phrases on power-down.

Finally, you get a couple of effects banks, with eight effects each to chain together, by using the strips. These are excellent, the wah and distortion options being dramatic personal favourites, and you can easily shape a sound as much as, if not more than you can by delving into the (not so many) layers of FM on offer. These are, along with the Looper, great additional features for DX.

At the launch, this was the surprise package when I auditioned the range – I wasn't expecting to be that impressed with 'just a bunch of piano sounds', but was instantly drawn in. I'm happy to report that, after testing the unit properly, my relationship with it is not only still on, but blossoming. You may even have to buy a hat for the wedding...

The CP has just six piano sounds to choose from. They're not presets, as such, more voice types, but effectively act as starting points. The clue to each sound type is in the names... RDI and II cover 70s electric pianos, the former being a more rounded sound, the latter introducing brighter overtones; WR gives a 60s variant, a more mellow sound; Clv is the more distinctive,

select one of the six sounds and a Drive dial, that introduces the first of eight effects, a pleasing overdrive sound adding mild distortion to the selected preset, and very much more effective on the 70s sounds.

Next, you get six effects split over three sections. First up are Tremolo and Wah; then Chorus and Phaser; then Digital or Analogue Delay. You can choose either effect (or neither), and each pairing has Depth and Rate/Speed/Time dials to increase the effect. Finally, a simple Reverb dial adds a lovely sustaining spacious effect to the overall sound.

I absolutely love the simplicity of what you get here – the ease of dialling, the 70s feel of the knobs and the stark fascia – but it's what everything does and the combined effect that drew me in originally, and I think this keyboard, more than any in the range, excels at the reface thing of being both hands-on and playable. It was stated several times at the launch that these are machines to jam with or simply noodle on while sitting on the sofa, and I reckon this is the most apt one to do that with.

You can lose yourself for a long while, playing sounds and changing them dramatically with the effects. I'm not sure that in two decades of doing this I have ever played anything that allows you to change a sound so quickly, dramatically and pleasingly without having a bloody great big synthesiser behind it. With this, you are doing it all with effects and I love it. It must be how a guitarist feels – now I understand!

→

My relationship with the keyboard is blossoming. You may have to buy a hat for the wedding...

2. The reface CP

In retrospect, there was always going to be more to say on the reface DX than any of the other three keyboards in the range (bar maybe the CS), as that unit has presets, touch strips and FM to explain. CP is a lot easier – no need to worry about me going off on a synthesis tangent or a rant about sounds. In fact, there's little of any complicated stuff to explain, and I can pretty much get straight into it...

rasping 70s electric keyboard sound; Toy a bright vintage toy piano; and CP based on a Yamaha CP-80 from the late 70s. This last sound is the most piano-like of all of those, and a beautiful rendition. As we'll see, though, where this instrument really succeeds is when it gets more atmospheric, utilising all of the effects on offer.

On the top panel, starting at the left, as with the DX, you get Volume and Octave sliders. Then there's the dial to

reface YC front-panel overview

a **ROTARY EFFECT**
Here, you can simulate the wah sound of a rotary speaker, spinning fast or slowly.

b **TONE SELECT**
Five organ waves to choose from, representing classic sounds from Hammond, Farfisa, Yamaha and more.

c **DRAWBARS**
Nine drawbars increase the tones across four octaves as you push each fader down, so start more bassy on the left and end more trebly (right).

d **MORE EFFECTS**
Switch between vibrato and chorus (green), plus a slider for depth, or push up two sliders to increase distortion and reverb (yellow).

e **PERCUSSION**
The red buttons increase the note's percussive effect, so when you hit a note the attack time is adjusted to result in a more percussive opening hit.





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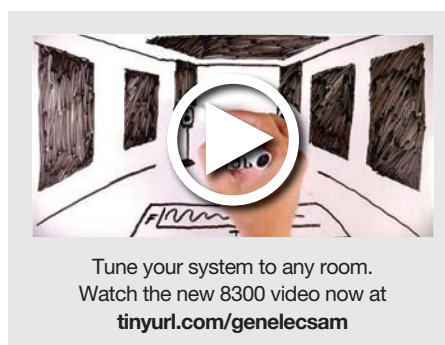
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→ And while we're on the subject, you even end up with some guitar-like sounds – push that clavinet through the wah and overdrive and you get a very organic electric guitar sound. As for the toy piano, you might not like it to start with, but combine it with some delays and a phaser and you suddenly have percussive beats on your hands, so while this is a very good electric piano at heart, it can create some great and very different sonic atmospheres.

Criticisms? The wow factor is strong in this one, but I guess you can always have more building blocks to start with, and six might seem mean to some. I could also have done with a few slots to save some of my creations – so good were they. Which brings us neatly to the

sonically, concentrating on just the organ sound, albeit five classics. I love a great organ sound, though, so I'm looking forward to trying it.

Yamaha has been as reticent in naming these sounds as it was with the waveforms on the piano, presumably at the risk of breaching some kind of copyright, so it's got me nervous now. The five sounds you get are H (presumably named after an ex-Top Gear presenter's surname); V (think 80s band starting with Ultra...); F (OK, look it's a bloody Farfisa...); A (Acetone); and Y, which I'm safe to say is Yamaha. The difference as you step through them is very clear, and they actually get more raspy, and a little more synthy as you reach the Yamaha, which returns the

It's the most distinctive looking, but YC arguably has the narrowest appeal of the range

reface Capture app, which is an essential (free) download, as none of the range, bar the DX, have onboard presets. You can read more about it on the last two pages of this review.

3. The reface YC

And so to the organ, the fetching red reface keyboard. It's certainly the most distinctive-looking of the four – and coloured to look like at least two of the electric organ types it is emulating – but arguably has the narrowest appeal

sound to a more mellow organ sound. Not that the initial sound matters too much, as the reface YC includes nine drawbars to further alter the sound, acting a little like an EQ – the further right you draw down, the higher the tones brought in. It's a great little section, in which you can really shape tones to be what you want. Again, it would have been great to have onboard locations to save the results in.

There's a Rotary Speed section at the very left to emulate the Leslie

What a save! The reface Capture app

One of my criticisms of the reface CS (and a little for the CP and YC) is not having the same onboard saving set-up that the DX has. The reface Capture app does make preset handling on these three reface models a reality, though. You can save your own sounds and you can also set lists – very handy for live performances, and ably demonstrated at the reface launch at Abbey Road. It's not quite the same as having it all onboard, like the DX – that machine really is on its own and standalone in this respect – but it certainly saves the day when you need to save a great sound, which I can guarantee will happen. You can also, get this, exchange data using QR codes, the scan/photo graphics. "This type of data exchange will certainly be very well received by young people," says Yamaha. Thanks! Like I'm not already feeling old and paranoid with those bloody dubstep presets.

speaker sound – a kind of 'wow' or 'wah' – similar in some ways to a slower tremolo. This is core to a true electric organ sound, and offers a great, authentic feel.

Other effects include either a vibrato or chorus (plus a depth fader) and a Percussion switch to increase the mechanical attack effect when a note is pressed, alongside a fader to increase its envelope. Finally on the effects front, you get reverb and distortion, both of which add a couple of dramatic aspects if you haven't tweaked and turned enough by this point.

Again, in terms of what the refaces set out to do – play, tweak and experiment with your sound, anywhere – I have to say that the YC succeeds as well as the CP. It is instant and has loads you can do. You can't quite stretch the sounds beyond their originals as you can with the CP, but the YC offers a huge range of sounds within its electric →

reface CS front-panel overview

a MAIN CONTROLS
You know the score by now. Volume and Octave controls are present, as is a Pitch Bend.

b LOOPER
More 'mechanical' than that found on the DX, but a useful live performance tool nonetheless.

c OSC
Where the action is. You choose your preset combi, and add Texture and Mod, changing other parameters depending on your initial choice.

d LFO
You can also modulate your Osc choice here and tweak one of four different parameters.

e OTHER CONTROLS AND EFFECTS
Some more big and dramatic synth controls, plus very usable effects, can be dialled in and out here.



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Hive has a surprisingly easy workflow: Build up your tracks in no time, tweak and edit until it sounds just right. Or just plain wrong in the right way! Keep the music flowing, no need to freeze tracks: Hive is easy on your CPU while still delivering the top quality sound you can expect from u-he.

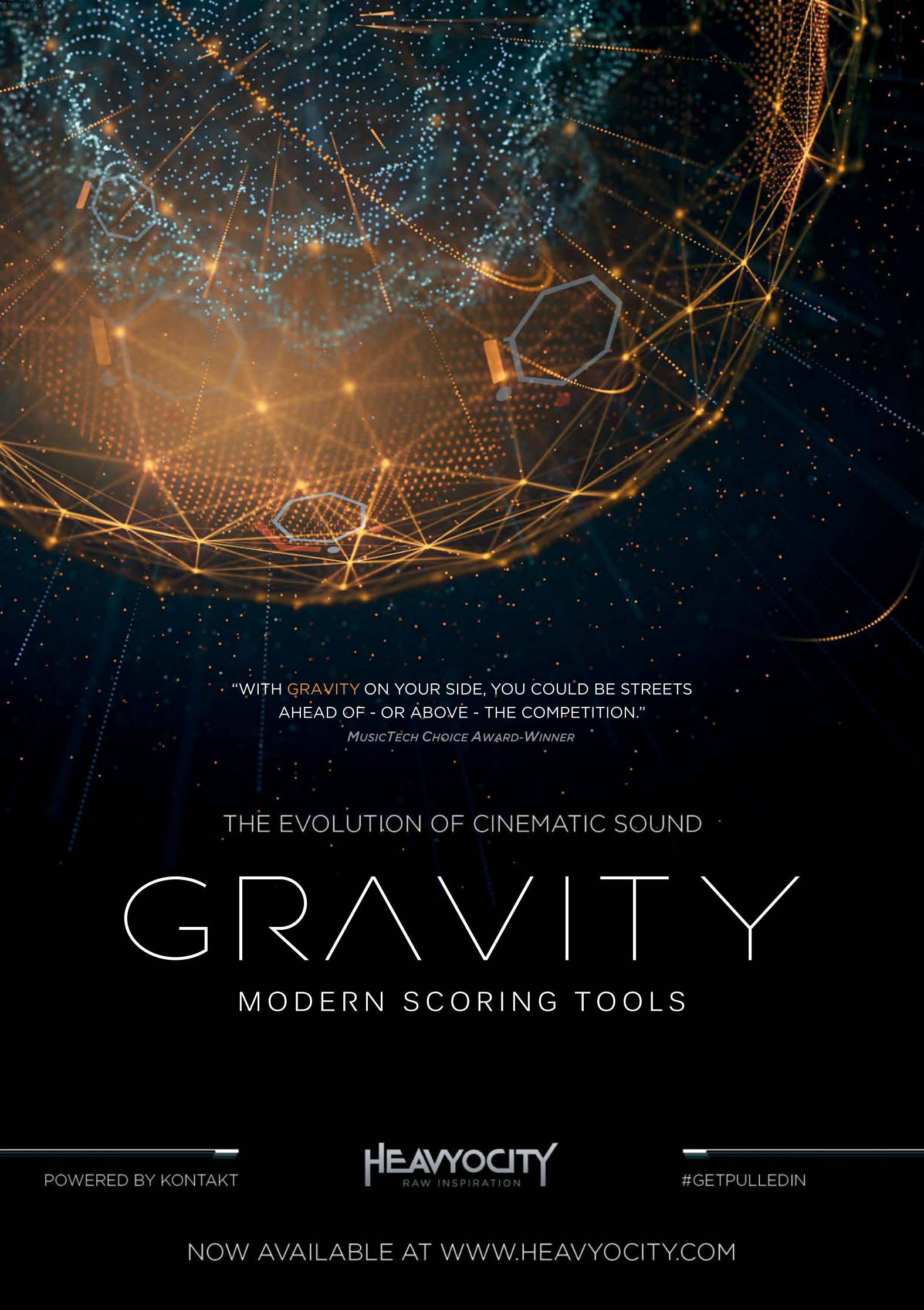
Beneath its streamlined exterior, Hive is a powerful and flexible synth that lets you dive deeper whenever you feel the need. With its drag and drop modulation assignment, built-in effects, 16x unison oscillators, arpeggiator / sequencer and exchangeable audio engines, Hive is ready for whatever genre you throw at it. A lightweight synth that delivers a heavyweight sound.

Download the Hive demo and hear for yourself:

www.u-he.com



While you're at it, check out the award winning Zebra2, Diva, Bazille, Satin and Presswerk. Same developer, same website, same fun factor.



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→ organ remit, and will appeal to anyone after anything from classic and mellow through to gritty and dirty.

4. The reface CS

And so to the second synth in the reface range, this time an analogue, albeit a physically-modelled one. Unlike the DX, you don't get obvious preset sounds to start with – more guides in the form of oscillator structures, and all part of a very clever and fast synthesis engine, which I quickly grew to like.

You start with one of these waveform combinations at the Osc section – as close as you're going to get

pausing and clearing – so it's a little clunkier to use at first, but has the same levels of storage. Again, you lose any phrases on power-down.

Sound-wise, I love what you can get with the CS, and also how quickly you can get it. Do be careful with the effects – you can quickly feed back on yourself if you push the Rate and Depth sliders – and be careful when switching Osc waves, too, as they do pop between certain combinations.

These combinations might not be clearly 'preset-y' enough for some. Whereas the DX has 32 named and descriptive presets, the CS has only

By having **onboard presets** on DX, you wonder why they couldn't have **included them on CS too**

to a preset sound. Select one from five: FM, Ring Mod, Osc Sync, Pulse and Multi-Saw. Each then has a Texture slider to increase a major parameter value within that wave structure, typically the pitch of a second oscillator or the sub osc level. Then the Mod slider does the same again with another parameter, say the pulse width, or it adds more layers of sawtooth waves (in this case to the Multi-Saw). Essentially, what these three dials are doing is easy and dramatic sound synthesis. You can then further refine things with an LFO, which will either modulate the volume, pitch or filter cutoff of the oscillator or another parameter, again dependent on the source osc type. It's very clever and gives you a heck of a lot of control – and drama – over just a few faders.

There's more, in the form of a separate Filter and Resonance slider, and pitch and amplitude envelope parameters to adjust – again, the big parts of an original CS synth, distilled slightly for a new generation of hands-on tweekers. Some knowledge of synthesis would help here, but really it's pretty easy stuff if you know your LFOs from your filters.

Finally, on the features side of things we have, as you might expect by now, a very usable and dramatic effects section (four to choose from with Depth and Rate sliders) and a looper. Rather than making use of a screen, as with the DX, this phrase recorder is rather more mechanical, making use of a lever to switch between recording, playing,

those five Osc waveforms to start with, and I think that might put off some people. You haven't got an instantly recognisable synth sound, and even the YC and CP have distinctive organs and pianos as building-block starters. I switched the CS on and got a blast of squiggle. Yes, I turned it into a soaring SAW pad very quickly but, well, first impressions and all that...

The CS, then, does suffer a little from not having discernible start points and proper presets, and it also suffers more than the piano and organ units by not having onboard preset locations to save to. And I say that only because the sounds you create will be amazing as, in terms of creativity, this is a beaut. I very quickly had some fat sounds, starting from very basic origins. I had worried that you might quickly flounder if you didn't know about synths, but you get some very good results – and very quickly.

Basses, fat pads, string leads, they are all here, as the synth is very versatile with those different Osc combinations as its primary ingredients. With the app, you can save your efforts, and you will want to get into the app to do this (I got into the app *only* to save one particular sound I created!). But having preset locations onboard the CS (and to a lesser extent the CP and YC) would have been nice and, I think, more within the reface 'sofa-style' remit. It is especially highlighted on the CS, as when you combine your creations with the effects

and push the Mod and Texture sliders you will want to save straight away! And by showing that onboard synth presets can be done so well with the DX – thus making it a truly standalone keyboard – you wonder why a similar method couldn't have been applied to the CS.

About Face

So – finally! – to conclude. Of the four, I think the CP is the one I can recommend the most. With its broad sonic palette, simplicity and true dramatic tweaking, it is the reface philosophy in one keyboard. My only slight reservation is that you can probably get much the same sound from the DX's engine, along with the added flexibility that engine will give you. But the CP scores higher overall because it is the ultimate reface package: instant, hands-on, great sound, and one keyboard that you'll want to play.

Likewise, the YC performs in exactly the same way, but arguably for a slightly narrower audience. Everyone I know loves a piano sound – not all are organ fans. But those organ fans will love the YC – it's whatever you want it to be and, again, it gets there very fast.

I am slightly torn by the DX. What it does well is bring easy, hands-on DX sound mangling one step closer to reality, albeit a cut-down, four-operator version of FM. I love that it offers a great taste of the original, and what you can do with the sounds, especially in such a short space of time; and this overall level of ease of use is something you →

Alternatives

You can, of course, get these sounds in software, but that's not really the point. So, yes, NI's FM8 will give you a more complex engine and better sounds, and Arturia's CS-80 will give you a very polished CS. There are also a stack of organ and piano plug-ins out there, but the point is being able to sit on your sofa, play keys, twiddle real knobs and get instant results, seconds after you want them – not something you'll get too often with a computer. Synth-wise, there is one product that I've looked at that does slip into this area. OK, it doesn't have speakers, nor batteries, but the Roland JD-Xi does boast both digital and analogue synthesis, more flexibility and a stack of presets and other features. It won't give you the 'fun everywhere, anytime' approach, but it will do variations of the sounds of two refaces for just £70 more than one.





→ would never associate with the letters 'DX'. I am still on a downer about the newer sounds, though. Maybe I'm just taking this too personally, and maybe it really is for someone 20 (30?!) years younger than me, but even as I write about them, I'm getting irritated that they're there.

I want the CS to be like the DX. I want 32 presets of CS heaven. I want all the features of the DX and the sound of the CS. As if to enforce this point, the last thing I did for this review was boot up the CS again, tweak, come up with

have tested, and these are very much tailored to specific users.

Those negatives? I must say I'm not bothered by the key size, but I know this issue will irritate some people. The price? I just Googled them and every store has the retail standing at £289, not £347, and while I usually mark a product based on RRP rather than street price, when the entire street is saying one price, you pretty much go with that. And when that is close to 20 per cent off, that will do me. You might get more off if you buy more than one.

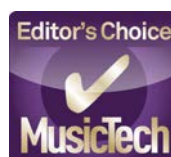


So **good is the sound**, the CS gets my Editor's Choice despite it getting **the lowest score...**

the most amazing sound I've ever heard, and one that will go on everything I compose over the next six months. So good is this sound, the CS gets my Editor's Choice Award despite me awarding it the lowest overall score. Bizarre, but this is personal; I'll explain.

The reface range will still split opinion. They are personal keyboards, not just in the physical and sonic sense, but in the emotional one, too. What I want is perhaps not represented in the range completely, but take my thoughts only as a guide. You may be more of an organ or dubstep fan than me – this is more a personal choice than with any other piece of studio equipment that I

Overall, I find the range quite charming in that you can carry them, play them and hear them without connecting to the mains or dragging in your entire studio. They are sufficiently different to be appealing to both specialist studio-heads – who are after some light relief and instant hands-on inspiration, anywhere – and to a mass market who are ready to stop looking down at their phones and ready to get on and try doing something less boring instead. I'm pretty sure that at least one of the range will appeal to you, and I'd urge you to check them out, because I reckon at least one of them will surprise you, too. **MT**



MT Verdict – reface DX

- + Brilliant FM sounds
- + Easy FM sound editing
- + Incredibly hands-on
- + Useful looper
- + Great effects
- + You can save sounds onboard
- + You may like some of the presets if you're under 25...

- ...but may not if you are over 45
- Fairly simple FM synth engine
- Only eight-voice polyphony

reface DX opens up a complex synthesis to the masses and makes editing sounds – albeit from a relatively simple engine – a breeze. Didn't need the dubstep...

8/10

MT Verdict – reface CP

- + Amazingly simple to use
- + Fantastic piano sounds...
- + ...and effects
- + You will jam and play with it
- + Incredible flexibility

- Can't directly save new creations
- Some sounds are in the DX, which has a more powerful engine

Our favourite in the range, the CP is what it's all about: tweakable, playable, and incredibly enjoyable.

9/10

MT Verdict – reface YC

- + Easy to tweak
- + Great sound and presets
- + Drawbars allow lots of shaping
- + Simple to use
- + Great and hands-on effects

- No onboard saving
- Narrowest sonic appeal

Again, YC does the job, just like CP. Tweakable, instant sound shaping. Great sounds and effects. Arguably a narrow focus, though.

8/10

MT Verdict – reface CS

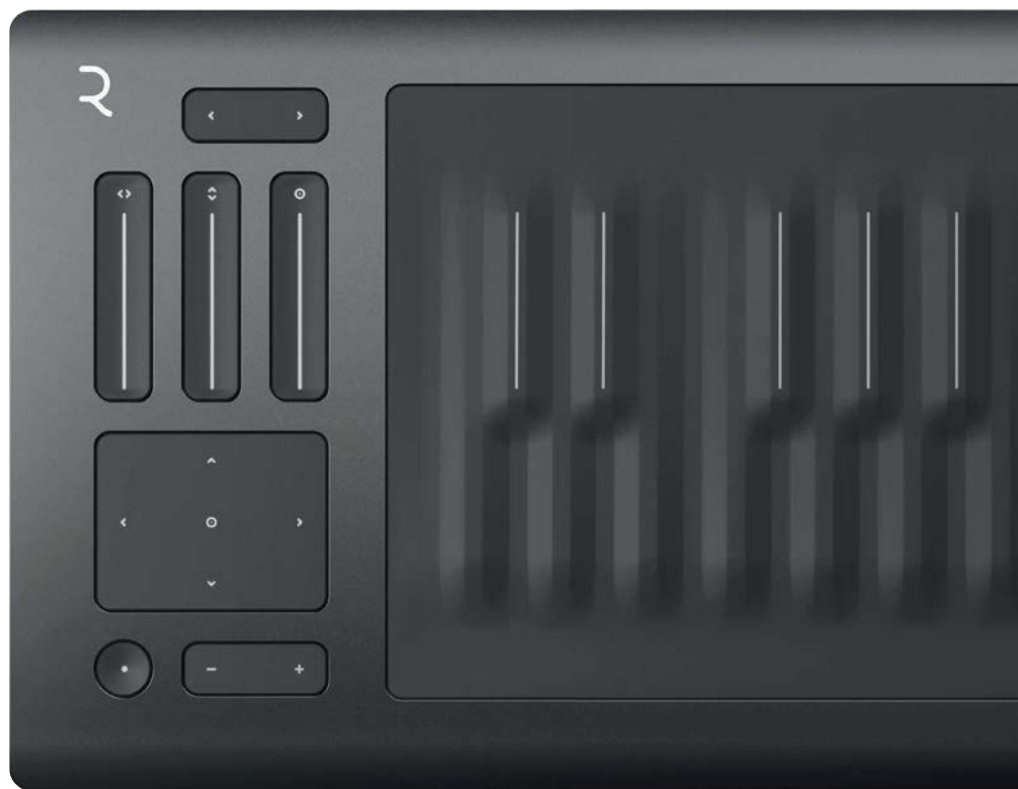
- + Lovely hands-on synthesis
- + Flexible, great sound
- + Effects add drama and character
- + Easy CS!

- Lack of presets, so you'll need basic synth knowledge
- Saving like the DX would be great
- Lack of polyphony is noticeable on big sounds

If this had the DX's features, it would have scored a 10. As such, it sounds amazing and sonically it wins the editor's heart.

7/10

Seaboard RISE



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Choice
9/10
MusicTech

CONNECTIVITY iConnectAudio4+

The new iConnectivity interface connects to PC, Mac and iPad. **Mike Hillier** is going mobile...

When it comes to music making, an iPad can be a very liberating tool and, with the right software, can be used as an instrument or as a DAW. The touchscreen interface often makes for a far more intuitive way of working and playing than a keyboard, mouse or even MIDI controller. And this opens up potential for creativity in the studio, so long as the tablet device can interface with the rest of the studio equipment, which usually requires a simple audio/MIDI interface.

On the face of it, this is all the iConnectAudio4+ is. It provides up to four channels of audio in and out of the device, as well as MIDI over traditional five-pin DIN and USB. This alone is a fairly impressive set of spec, but perhaps the most interesting thing about the iConnectAudio4+ is that not only can it interface your iOS device with your studio equipment, but it can also interface with a Mac or PC simultaneously, and – most importantly – therefore allows audio and MIDI to be sent directly between the iOS device and the Mac/PC over USB. This means

Details

Manufacturer
iConnectivity
Price £279
Contact Sonic
Distribution
0845 500 2 500
Web www.iconnectivity.com
Minimum System Requirements
PC: Windows Vista or greater, USB port
Mac: OSX 10.4 or greater, USB port
iOS: iOS 5.0 or greater and a CoreMIDI/CoreAudio-compatible app

Key Features

- Host two Mac/PC/iOS devices simultaneously
- Standalone audio mixing and MIDI routing
- 24-bit, 96kHz AD/DA conversion
- MIDI I/O
- 4 XLR/TRS combi-inputs
- 4 TRS outputs
- TRS headphone output

that no D/A or A/D conversion is necessary for audio.

One box to rule them all

The front panel of the iConnectAudio4+ houses four combo XLR/TRS inputs, as well as a rotary encoder and a small touch panel with visual LED feedback. The first two inputs can be used as either mic or Hi-Z inputs, while the second two are configured for use as mic or line inputs.

On the rear are three USB ports: one type-A – designed for hosting devices such as MIDI keyboards and drum pads, and two type-B – for connecting to iPads or PC/Mac computers. Of these two type-B ports, the first one can be used to charge an iPad.

Also on the rear are two five-pin DIN MIDI ports, for MIDI I/O, four balanced TRS outputs and a stereo headphones output. All these I/O options create a wide variety of methods of routing audio and MIDI in and out of the iConnectAudio4+. Thankfully, there is an easy-to-use software controller, iConfig, for both Mac and PC, which makes routing audio and MIDI simple. The iConfig software enables you to route audio from any of the analogue inputs to any of the analogue or digital outputs, or to the internal mixer – the outputs of which can then be routed to any of the other outputs. Inputs can be split or combined in almost any way you can conceive, making it possible to create a separate headphones mix, while

Alternatives

While there are plenty of audio interfaces for the iPad, such as the excellent Apogee Duet, the iConnectAudio4+ is unique in enabling you to connect to both the iPad and your Mac/PC at the same time, streaming audio from one to the other.

duplicating the main mix across two separate monitor outputs.

Studio central

In the studio, we used the iConnectAudio4+ to connect our iPad and Mac, employing the first two USB ports, and then to our MIDI keyboard via the USB host port. We connected our monitor controller to the first two outputs, and used the second output pair for an outboard reverb, which also fed the line inputs of inputs 3 and 4.

Furthermore, we connected the MIDI out from the iConnectAudio4+ to the reverb, providing us with MIDI control of the reverb unit from inside our DAW. Inputs 1 and 2 were left free for microphones and guitar inputs as and when we needed them.

The great benefit of this setup is that it enables us to route audio into and out of the iPad as an effects unit, using applications such as Moog Filtatron or Sugar Bytes WOW2. This means we can work entirely from our favourite DAW, while still taking advantage of touch-based effects without having to run an analogue cable between the two, or worry about conversion degrading the signal.

The iConnectAudio4+ is a must-have device for any musician or engineer who wants to integrate their iPad with their professional studio equipment, incorporating it with an existing interface to get the best of both worlds. But more than that, if you are just starting out in audio the iConnectAudio4+ could make a great first interface to link all your studio gear without even needing another interface at all. **MT**

MT Verdict

- + Integrates iPad and Mac/PC
- + 4 analogue inputs
- + 4 analogue outputs and separate stereo headphone out
- + MIDI and USB/MIDI hub

- No Android support

An excellent innovation. The iConnectAudio4+ streamlines your iPad workspace.

9/10





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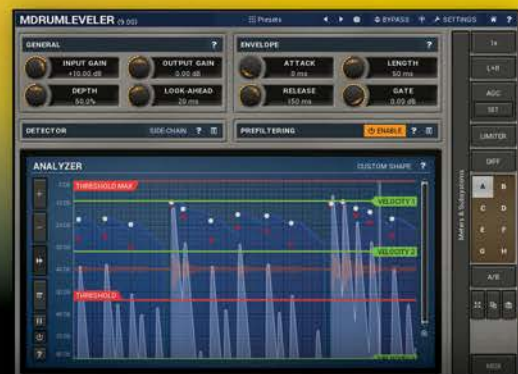
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SONOKINETIC Tutti Vox - Cinematic Choir

After a string of orchestral products with a stylish GUI and a unique way of working, Sonokinetic has released a cinematic choir library in a similar vein.

Keith Gemmell sings its praises...

Details

Price €299

Contact via website

Web www.sonokinetic.net

Minimum System Requirements

NI Kontakt and free Kontakt Player 5.1 and up

Although not exactly commonplace, there are several conventional high-end choir libraries around that allow you to program complete soprano, alto, tenor and bass choral works – some with word builders, others with just oohs and aahs. Sonokinetic's new 48-piece choir library, though, is rather different in that the content is geared mainly towards producing cinematic choir effects. However, melody writing has not been abandoned completely, because there's also a phrase builder for constructing conventional tunes and harmonies. A third section contains a selection of spoken words.

Everything was recorded in the same hall as sister libraries Capriccio, Grosso, Minimal, Da Capo, Tutti and Vivace. As such, the ambient sound of Tutti Vox blends well with all of them.

Core blimey

The bulk of the library consists of a Tutti Vox Core patch, with an amazing collection of the kinds of choir effects most libraries only touch upon – atonal risers, falls, crescendi, decrescendi, clusters, ethereal beds and constantly evolving soundscapes, some over 40 seconds long. There are plenty of whispers, words and shouts, too.

If you've not used any other Sonokinetic products before, with so

much information to cram in, you might find the GUI a little intimidating. If so, the online videos should be your first port of call. However, if you're familiar with Capriccio or Grosso, you'll feel at home straight away because all three programs are conceptually similar. Also, there is a help screen available with useful information about each aspect of the interface.

Unless you choose the alternative light patch, there are four microphone positions (Close, Decca Tree, Wide and Far). However, they cannot be mixed, and whichever one you choose will affect the entire patch. A workaround is to open a second patch on a different track, select a different microphone position and mix them in your DAW.

Just as in Grosso and Capriccio, icons are used to visually represent the different phrases on offer. It's a neat system, once you get used to it. If you read music, though, you might find it easier to select phrases using the notation supplied. This is what the singers worked to when they recorded them. The phrases themselves are numerous, and divided into four categories: Glissandi, Vocal FX, Beds Atonal and Beds Tonal. With such an abundance of material in the Tutti Vox Core patch, inevitably, some phrases are rather similar to each other, and after a while a certain air of sameness begins to creep in.

Alternatives

Most choir libraries contain effects of some sort, but they are often something of an afterthought. That's not the case with Requiem, which has more than 1,000 effects articulations. Voxos, too, has a large range of effects and clusters split into male and female sections. VSL's Choir features a much smaller range of SATB creepy voices.

Latin lingo

Two further patches, Tutti Vox Lingua and Tutti Vox Spoken, are for constructing sung phrases and spoken words respectively. In the case of Lingua, the process is quite complicated, and for that reason two options are available: Quick Play and Advanced. The words, naturally enough for what is a cinematic program, sound Latin, but are mostly fantasy words, built around oft-used vowels and consonants. In Quick Play mode, very effective phrases can be easily produced, but it's worth the extra effort to learn how to use the advanced section, which features a full SATB choir. Impressively, each section can sing different words simultaneously.

As a cinematic choir library, Tutti Vox is exceptional with an enormous variety of choral effects and depth of control. However, it is complex software with a fairly deep learning curve, and some video watching and manual reading are essential to get the best from it.

Although conceptually similar to Tutti, Grosso and Capriccio, the vast amount of material is overwhelming, and in places rather similar. For that reason, we didn't find it quite as inspirational as the other products in this series. That said, there's much to commend it – a new approach to choir sampling, a very realistic sound with unique and highly imaginative phrases, and all the necessary ingredients for cinematic productions. In other words, a first-class library that's well up to the usual high Sonokinetic standards. **MT**

Key Features

- 48-piece Cinematic Choir (SATB)
- 3 Kontakt instruments: Tutti Vox Core – Glissandi, Clusters, Vocal FX, Tonal & Atonal Beds; Tutti Vox Lingua – Chants & Sustains; Tutti Vox Spoken – Spoken words and Phrases
- 16- & 24-bit formats

MT Verdict

- + Imaginative choir effects
- + Compatible with other Sonokinetic libraries
- + Good phrase builder

- Awkward mic mixing
- Some effects rather similar

One of a kind, a complete library crammed with imaginative choir effects, along with sung phrases, spoken words, an excellent phrase builder and good editing facilities.

8/10

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Made for

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OUTPUT SIGNAL

Choice
9/10
MusicTech



Is your music missing a pulse? **Mark Cousins** finds out if Output's SIGNAL can add a harmonic heartbeat to your sonic work...

Details

Manufacturer **Output**
Price **£159**
Contact
outputsounds.com

Output first came to our attention with REV, an intriguing Kontakt-based virtual instrument, focused solely on the idea of reversed sounds. By concentrating on a niche sound type, Output could develop a wealth of content and a custom-designed interface that really addressed the 'reverse' concept. As such, REV was both a beautifully designed instrument and an inspiring tool with a wealth of musical potential. Having made such a promising start with REV, though, how could Output further define its unique approach to virtual instrument design?

SIGNAL is Output's latest offering, this time shifting its focus towards 'pulsing' sounds – whether it's a chugging synth bass, abstract glitching effects, or swirling arpeggios. If you're familiar with some of the tempo-synced sounds on instruments such as Absynth or Omnisphere, you'll be at home with what SIGNAL has to offer. These pulsing sounds have also become a cornerstone of cutting-edge cinematic scores, such as Junkie XL's *Mad Max: Fury Road*, as well as being a popular musical element in a range of electronic styles.

Key Features

- 500 Pulse Instruments
- 40GB of content
- Looper, step sequencers, arpeggiators, LFOs
- 4 central MACRO sliders

Signal box

To understand the fullness of what SIGNAL has to offer, it's well worth taking a closer look at the technical background behind the instrument and how each SIGNAL patch is created. The starting point is a series of sound sources, covering both acoustic/electric instruments – including electric guitar, bowed piano and distorted guitar – as well as a range of synthesiser-based sources. Two sound sources can be layered in each patch, letting you explore the hybrid possibilities from layering the various different sound elements.

The creative possibilities of SIGNAL get really interesting when you factor in its Pulse Engines. Put simply, the Pulse Engine is the key feature that brings SIGNAL's presets to life, adding various forms of movement and development within the patch. Technically speaking, the Pulse Engine works in four different available modes – Step, Arp, Loop and Wave. The Step and Arp modes should be reasonably familiar, covering various arpeggiation modes, based on either single held notes or chords, while the step sequencer offers a series of CV sequencer values that can be

mapped to various parameters within the Pulse Engine.

Finding the Pulse

One of the more intriguing Pulse Engine modes is the Loop mode, which could be described as a form of sample-based pulsing. In effect, the Loop mode works by setting a time period for a loop that's placed over the sample data – such as a 1/16th section, for example. As well as setting the time period, you can also specify the placement of the loop, which can have a dramatic effect on some of the percussive sound sources (effectively 'cutting into' the note), or a more subtle result on the sustained sound sources.

Another key concept of the two Pulse Engines is that two rhythms can be applied per layer, letting you build up hybrid combinations of the various modes. A simple 1/4th loop effect, for example, could be layered with a 1/16th step sequencer, adding stepped filter movements. Likewise, a fast-moving 32nd arpeggiator could use a slow-moving LFO-like Wave mode to spin the sound around the stereo image. Couple this with some contrasting syncopated effects on the second engine, and you →

TUTTI VOX

CINEMATIC CHOIR



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www.sonokinetic.net

→ can soon see how SIGNAL becomes musically complex and interesting to the ear.

Macro fun

If this technical description of SIGNAL's sound-shaping tools is starting to sound too complex, it's worthwhile pointing out how much of SIGNAL's design ethos revolves around it being an intuitive, easy-to-use software instrument. This begins with an impressive array of preset content that's navigated away from Kontakt's own instrument navigation system. As a result, SIGNAL has just a single Kontakt Instrument setting, from which its own preset navigation screen can be found. Patches are attributed with a range of pulse-specific tags, letting you find the right sound quickly and easily. While it's possible to build a patch from the

this unique instrument. Many of the presets illustrate how the various Pulse Engine layers can work dynamically, either combining contrasting sound elements – such as a gritty synth with harp harmonics – or syncopated rhythms that seem to dance between the two Pulse Engines. One key component in many of the sounds is SIGNAL's in-built effects section, which is often used to provide much of the bite, body and drive in SIGNAL's output.

Skip a heartbeat

Like a number of contemporary Kontakt-based instruments, SIGNAL's interface is a masterpiece of elegance and functionality. Despite its complexities, SIGNAL remains clear and clean, whatever layer you decide to operate on – whether it's tweaking a few simple macros, or exploring the real

/// SIGNAL is clear and clean, whatever layer you decide to operate on, whether it's tweaking or exploring in depth. ... ///

ground up, it's largely the case that most users will start with one of the 500 or more included presets. At this point, SIGNAL's large macro controls, that dominate the user interface, really come into play, letting you tweak the presets in a musically-dynamic way: whether it's radical filter movements or subtle sweeps between the different rhythmic layers. Rather than over-playing SIGNAL's full parameter set, the interface adapts as you delve deeper – first to the top layer of the Pulse Engine, and then to its full glory when you open the Advanced controls. In short, some users may never reach SIGNAL's full programming depths, while others will relish the ability to tweak to their heart's content!

If nothing else, it's well worth a good peruse through SIGNAL's presets to see just how much can be achieved with

depths of the Pulse Engines. Neat touches – such as the range of preset patterns in the Step mode, or the in-built help system – show that the user experience has really been considered, and that, most importantly, SIGNAL is designed to be quickly and easily edited. Even with these elegant and intuitive design touches, SIGNAL is still a vast instrument, so new users should definitely watch the YouTube tutorials before jumping in!

Sonically speaking, there's a wealth of bounty included in SIGNAL, that will keep many soundtrack composers or EDM producers happy for hours. While other instruments (such as the aforementioned Omnisphere and Absynth) cover similar areas, there's little doubt that SIGNAL's focused approach lets you find the right type of pulsing effects quickly and easily. We were also impressed by just how playable many of the sounds were, often making good use of SIGNAL's

Alternatives

Omnisphere 2 (£285) is one of the most popular choices for these types of pulsing sounds, with a number of features – including an arpeggiator, rate level envelope generators and a step sequencer – that work well in this application. Technically speaking, Omnisphere 2 doesn't include the Loop function found in SIGNAL, but it does include options such as Granular Synthesis and the ability to import your own sample data. There are also other Kontakt-based options, including Sample Logic's ARPOLOGY (\$399), which uses a combination of an arpeggiator and step animator to create distinctive pulsing effects.

arpeggiator and macro controls so that the sound 'lives and breathes' underneath your fingers.

While it's hard to criticise something as well constructed as SIGNAL, there are a few points worth noting. In an ideal world, the ability to import your own sample data would be welcome, as illustrated by this type of functionality now being included in Omnisphere 2. Although the included sound palette is undoubtedly wide, it might be interesting to see further sound source elements added, maybe even with add-on libraries like the existing Tape Loop and Cinematic patch expansion packs. Ultimately, the Pulse Engine has loads more to offer, so it would be interesting to see how it would behave with an even greater range of sound source content.

As with REV, therefore, SIGNAL demonstrates that the developers working at Output have a keen eye on contemporary sound design and the sonic needs of many composers and producers working in the field of electronic music.

From the imaginative, carefully-curated sound sources through to the intricacies and flexibility of the Pulse Engine, SIGNAL is an instrument that's designed to deliver a wealth of inspiring and intriguing sounds. **MT**

MT Verdict

- + Exhaustive collection of pulsing sounds
- + Powerful and imaginative sound engine
- + Elegant and powerful interface
- + Great for cinematic and EDM styles

- Finite selection of sound sources
- Deep and complex sound engine

Visually and sonically stunning - SIGNAL is a thoroughly inventive virtual instrument packed full of distinctive, musically-focused sounds.

9/10



SIGNAL Free

If you want to experience some of the possibilities of the Pulse Engine, Output has released a version of SIGNAL called SIGNAL FREE (<http://outputsounds.com/products/signal-free>), which includes the full Pulse Engine, 25 presets and four sound sources. If you run the full version of Kontakt, you have unrestricted access to SIGNAL FREE. Users of the free Kontakt Player will experience a 15-minute time limit, after which they'll need to open and close Kontakt to carry on.


"If you'd rather spend time working on your tracks instead of browsing through technical manuals, Mixcraft Pro Studio 7 is the perfect blend of simplicity and sophistication."

– BedroomProducersBlog.com



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IZOTOPE RX Final Mix

Choice
9/10
MusicTech



Ever struggled to hear dialogue in a blockbuster movie? **Hollin Jones** finds out if Izotope's RX Final Mix might have the answer...

Izotope's reputation for making great audio mastering software is well deserved, but the company also makes the RX series of processors, that are tailored more towards audio post production. Anyone working on sound for TV, film or radio has a similar but distinct set of requirements to musicians. You may be working with fewer tracks of audio, but you're still mixing to a medium. Audio post also incorporates elements that musicians rarely have to deal with, such as location sound, different voiceovers and Foley effects.

RX Final Mix is the newest member of the RX family, and is aimed at helping producers achieve a better balance of tracks when working with the kinds of diverse sounds you find in the audio post world. Typically, the mixers in non-linear editors (NLEs), such as Premiere, Final Cut Pro or Avid, are good but not as detailed or comprehensive as those in a DAW. For serious projects, the audio side is often handled separately by a sound mixing specialist, and although Final Mix is certainly targeted at those people, it could well make things much easier to deal with in any NLE that supports plug-ins, potentially removing the need to hive off the sound to a separate facility.

Mix it up

Running as a plug-in in all major formats means it can be loaded into any application that supports plug-ins, which covers a lot of ground. The idea is

Details

Price \$299
Distributor
Time+Space
Contact 01837 55200
Web
www.timespace.com
System requirements
Windows 7 or higher
Mac OS X 10.7 or later
Plug-in host

Key Features

- Dynamic EQ with 8 nodes
- Transparent limiter
- Support for up to 7.1 surround
- BS.1770-2/3 compliant
- Post-specific presets
- Stem or master buss processing
- Static or dynamic EQ with threshold

that you insert it onto individual busses and call up and tweak a preset according to the particular problem you are facing. A common example might be that dialogue sounds boxy and is being lost amongst the effects and music tracks. This can be a problem even in big movies, where clarity sometimes feels as if it has been sacrificed in favour of sheer volume of explosions.

The plug-in has two main sections: dynamic EQ and a limiter. Of course, you can load up an EQ and a limiter from your own collection, but the emphasis here is on speed of workflow and the fact that the presets are specially tailored to common audio post tasks rather than mixing music. The EQ has the ballistics of a compressor, meaning that each of its eight available nodes, as well as having shelf and Q controls, can be made to work either in static or dynamic mode. In dynamic mode, the shape and depth of the EQ curve will change based on the signal it is receiving at any given time. This means you don't have just a single EQ curve for a whole stem, where requirements might change over time, but rather a continually adapting one. There's a user-definable threshold setting that controls the point at which the EQ node goes from static to dynamic, so you can tune it to suit any source material.

To the limit

The limiter has clear, smooth or thick characters, and allows intelligent loudness maximisation while staying

within industry-standard regulations to ensure no True Peak overloads. Essentially, this means you can get a nice loud signal without worrying that your sound is going to be too hot for broadcast. The plug-in offers up to 7.1 surround support with control over LFE channel processing, so working in surround is not a problem. Probably the best way to work with RX Final Mix is by inserting an instance on each stem inside a project: music, ambience, Foley, dialogue and so on; then calling up one of the handy presets and making tweaks. It's easy to fairly dramatically improve the clarity of dialogue, carve out space for music in amongst the location sound and so on. This is possible by using other plug-ins, but takes far longer to get right.

Final analysis

It's also possible to use the plug-in on your master buss, though if you have the option of stems, that's a better idea, since you retain more control. In situations where you have only a mixdown to work with, where your elements are already blended together, it's still able to do a good job of identifying and sharpening up the clarity of elements within the mix. Revisiting long-finished video projects, we found it was possible to improve intelligibility of speech in a stereo mixdown without adversely affecting backing music and other elements.

Certainly, this is a plug-in that will be used on projects from now on before delivery. Final Mix RX is relatively niche, but will be invaluable to audio post producers. Enabling you to use the relatively basic audio mixer of an NLE in much more powerful ways, it is likely to speed up your workflow, and will help you create audio mixes that are clearer, refined and more professional. **MT**

MT Verdict

- + Straightforward to use
- + Highly effective
- + Solves a real problem for post producers
- + Dynamic EQ is great
- + Surround support
- + Cleans up existing stereo mixes
- + Better separation of stems

- Arguably slightly expensive, unless you work in post a lot

An excellent solution for achieving clear, intelligible and standards-compliant audio mixes for post producers.

9/10



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DBX 676

dbx's 676 is a feature-packed channel strip that offers incredible versatility in the studio. **John Pickford** takes a closer look

Details

Price £949 inc. VAT
Contact Sound
Technology
01462 480000
Web dbxpro.com

The trend in studio hardware these days seems to be for new companies creating products based upon, or inspired by, classic gear from the past. It's refreshing, then, to see (and hear) a brand-new product from a well-established company that has been designed in-house, without so much as a nod to vintage audio products. While the design may be brand new, dbx has employed some vintage technology, in the shape of the valve-driven preamp section of this fully-featured channel strip. The 676 comprises a tube (valve) microphone preamplifier, a semi-parametric equaliser, compressor and limiter in a 2U 19-inch rack-mount case. This type of recording channel has become increasingly popular, especially among lone recordists working with a DAW, who like to inject some quality analogue warmth into their digital recordings at the input stage.

It should be pointed out that this is not a pure valve unit; only the preamp features a single valve, while the rest of the unit employs solid state technology. An initial inspection revealed the 676 to be built to a high standard and exceptionally well laid-out, especially considering the wealth of pots and push-button switches on the front panel; there's even room for a decent-

sized VU meter. Although the unit is not designed to copy vintage hardware, it does boast classic styling without being obviously retro. The pots – all of which are continuously variable – are sized and spaced to avoid fiddly operation, and are sculpted to feel pleasant in use.

In use

Taking each of the channel strips' functions in sequence, the preamp section has all the usual features – phantom power, input pad, polarity invert and high-pass filter – as well as a Hi Z instrument DI input. The main feature of the preamp is its dual input-level controls. The first (pre-tube) Gain pot controls the amount of input gain supplied to the tube preamp; the higher the setting, the harder the valve is driven. The Post Tube Attenuation pot controls the amount of attenuation applied after the tube stage, allowing correct level matching for good gain structure. For the cleanest results, this attenuation control should be set to maximum with just a small amount of tube drive from the Gain pot. We experimented with these controls and found that the amount of audible tube saturation was less than expected at high-gain settings. Other units with similar controls offer more obvious distortion effects than the 676, which

never got as downright dirty as we'd hoped. We were able to hear a degree of edge introduced at full-pelt; however, the effect was subtle, and it was possible to adjust the controls quite dramatically without hearing significant changes in tone and drive.

The basic sound quality of the mic-pre is good, if slightly opaque when compared with our reference all-valve mic-preamps, but there is plenty of available gain (60dB), so it has plenty of drive to amplify insensitive mics such as our Coles 4038 ribbon mic. The noise floor was reasonably low unless the valve was driven hard, provoking a certain amount of hiss. While the preamp is perfectly adequate, we'd advise potential users seduced by the valve saturation aspects of the 676 to audition the unit to make sure it produces the desired effects.

The equaliser is a semi-parametric design, featuring shelving EQ for the low- and high-frequency bands with fixed frequencies of 100Hz and 10kHz respectively. Both controls offer 15dB of boost and cut with a 12dB/octave slope. The mid-frequency controls operate as a peaking EQ, again with 15dB of available boost and cut. The centre frequency of the midrange can be selected within a range of 100Hz – 8kHz, and a switch is provided to select →

Key Features

- Discrete Class A tube microphone preamplifier
- 3-band semi-parametric equaliser
- 162SL-style compressor
- dbx PeakPlus limiter
- Hi-Z instrument input
- Preamp insert jack
- Compressor sidechain jack
- Balanced XLR and TRS preamp and compressor/limiter outputs.

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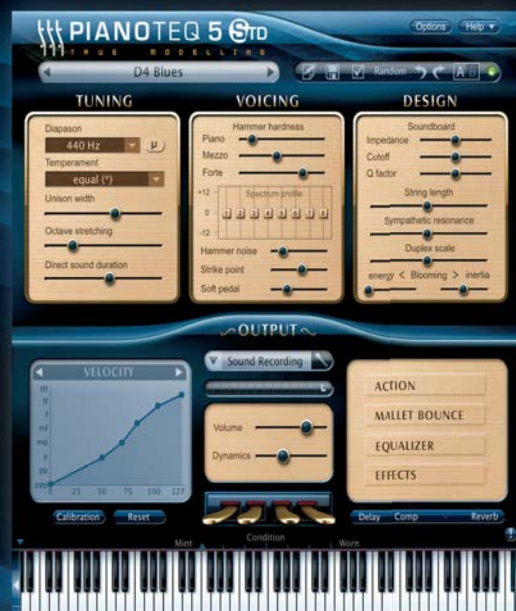
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→ the width (Q) of the peaking filter. This section of the channel strip was impressive. The fixed frequencies of the low and high end seem quite sensible, and in practice are effective. We were able to dial in substantial levels of boost in the right circumstances, with musically appealing results. Boosting 10kHz on an acoustic guitar mic'd with a valve Neumann U67 sounded lovely, quite unlike the sound of equalisers found on many budget mixing consoles. It's best not to be too liberal with EQ boosts during initial tracking, and we found that a touch of sweetening with a few dB of boost went a long way.

The mid controls are similarly powerful, and we found that scooping out some low-mids in the region of 400Hz (using the wider Q value) helped reduce muddiness from a kick drum, while the narrower Q setting allowed nasty rings and resonances to be easily identified and eliminated.

Moving on to the compressor/limiter section, things really started to get interesting. It's a VCA design taken from dbx's highly regarded 162SL model. The compressor features a full complement of user-adjustable controls, comprising pots for Threshold, Ratio, Attack, Release and Make-up Gain. Furthermore, there is an OverEasy button which, when engaged, alters the compressor's response characteristic from hard to soft knee. An Auto button is also provided, which bypasses the Attack and Release controls, allowing the compressor to automatically respond to the input signal. A button labelled Contour acts as an HPF set at around 180Hz. Engaging this control prevents the compressor from reacting to low frequencies, often the cause of

unwanted pumping artefacts. A Peak LED meter is provided which, when lit, indicates that the compressor is clipping the output stage and Make-up Gain should be reduced. Frequency-weighted compression can be performed by inserting an external unit such as an equaliser, and engaging the Sidechain button. Separate from the compressor is dbx's proprietary PeakPlus limiter, which features a single control pot. Turning this pot fully clockwise effectively turns the limiter off, while an LED indicates that limiting is taking place.

The compressor/limiter's comprehensive features don't end there, as the back panel features two XLR outputs to enable parallel compression effects. The Preamp output takes the signal from the preamp post EQ, but before the compressor/limiter, while the Compressor/Limiter output takes the signal post compression. Using these outputs simultaneously allows both compressed and uncompressed signals to be recorded. This can be useful for combining a heavily compressed signal with the clean signal to perform parallel compression, or to hedge your bets by recording a compressed signal, along with a clean signal if you're unsure whether or not compression is needed. As the compressor is capable of so many different applications, setting up can be as difficult or easy as you choose. Because the unit is capable of extremely fast response times, setting the Attack and Release times can take some getting used to; inexperienced users may well find the Auto control useful here.

Overall, we were quite impressed with the dbx 676. It certainly offers all the tone and dynamics control needed to get the best out of any signal processed through it. The compressor/limiter, in particular, is extremely comprehensive in the range of

Practical tip

To record a lead vocal, engage the input meter selection button to monitor your input level. The phantom power button should be engaged if a condenser mic is being used. For the cleanest tone, set the Post Tube Attenuation control to 0 and dial in enough gain so that the VU meter reads around 0dB on the loudest parts. For more tube saturation, increase the Post Tube Saturation and reduce Gain to maintain good input level. EQ and compression is a matter of taste. However, making use of the HPF is wise, and a touch of 10kHz top-lift may add some air. Use both the Preamp and Compressor/Limiter outputs to enable both a compressed and uncompressed signal to be recorded.

compression styles available. Everything from smooth, transparent soft knee (OverEasy) compression right through to hard limiting is available. The equaliser, too, is impressive, offering musical enhancement in the upper and lower registers – the 10kHz boost is particularly sweet – via the shelving filters, while the sweepable midrange control can usefully correct unwanted honks, ringing and muddiness. Although it's often a good idea not to be too heavy-handed with EQ and compression during initial tracking, the powerful sonic-shaping abilities of the unit can be used more liberally during the mixing stage.

Our only slight reservation was the performance of the preamp. While it offers a generous amount of decent quality gain, it doesn't quite have the valve character that we'd hoped for. In particular, we struggled to achieve any meaningful tube saturation, even when driving the tube quite hard.

The dbx 676 makes its mark as an exceedingly versatile piece of hardware, offering comprehensive and flexible audio processing during initial tracking, along with powerful sonic-shaping during mixdown. It's built to a high standard, sensibly laid out and a joy to use. A fully-featured channel strip at a very reasonable price. **MT**

MT Verdict

- + Flexible tracking ability
- + Sweet-sounding EQ
- + Comprehensive dynamics control
- + Useful metering options
- + Excellent build and lay-out

- Preamp noisy when driven hard
- Understated tube saturation

The dbx 676 is a comprehensively featured channel strip, able to amplify any microphone or electronic instrument to a high standard. The equaliser and compressor/limiter sections are both versatile and powerful, making the unit suitable for initial tracking and subsequent mixing. A supremely flexible audio processor.

8/10

Alternatives

Like the dbx 676, Aphex's Channel (£1,032 inc. VAT) features a valve preamp, parametric EQ and compressor. It also offers the classic Aphex Aural Exciter and Big Bottom enhancers, along with an effective de-esser and logic-assisted noise gate.





Details

Price £2,000 each
 Manufacturer Adam
 Contact 07590 069007
 or 0207 737 3777
 Web
www.Adam-audio.com

ADAM S3X-H

The S3X-H active midfield/nearfield monitor is Adam's attempt to deliver high power with no loss of accuracy or transparency.

Huw Price thinks it's succeeded...

Key Features

- 2x 7.5" HexaCone bass woofers
- 1x 4.5" HexaCone midrange driver
- 1x X-ART tweeter
- 3x 250W RMS PWM amplifiers
- 1x 50W RMS high-frequency amplifier
- Input Sensitivity control
- 80Hz adjustment -0 to +6 dB (1dB steps)
- High Shelf EQ > 6kHz ±4dB (1dB steps)
- Low Shelf EQ < 150Hz ±4dB (1dB steps)
- Tweeter gain ±2dB (0.5 dB steps)
- Analog XLR input
- Frequency response 32Hz-50 kHz
- THD > 80Hz < 0.6 %
- Max SPL with sine wave acoustic 100Hz to 3kHz at 1m → 116dB
- Max SPL per pair at 1m → 126dB
- Crossover frequencies 350/2800Hz
- Weight 43.2lb (19.6kg)
- Dimensions 280mmx530mm x320 mm

Although the original Adam S3A was well received by recordists working with acoustic instruments, the dance guys weren't convinced there was enough low-end power to cope with synths and sample-based drum and bass sounds. So the design brief for the S3X-H was to provide the power without sacrificing the accuracy. The original driver complement comprised

to drive the same frequency band. For good measure, Adam made the cabinet walls thicker, too.

Creamy cones

Adam's bass and midrange drivers are made from HexaCone. This is described as "an aramid-plastic core with honeycomb structure coated on both sides with Kevlar". The intention is to achieve maximum strength and

Instead of a metal ribbon, it employs a folded diaphragm that squeezes air in and out in response to an AC current. This apparently offers much greater efficiency over a standard piston driver, and a faster response time for improved transients. The onboard power ampspecs are pretty daunting. For the tweeter, Adam developed a low-noise 50-watt amplifier with a claimed flat frequency response reaching up to 300kHz. A 250-watt PWM amplifier feeds each of the woofers, and this amplifier is used in all the SX-Series monitors. Lastly, a further 250-watt amplifier is used for the midrange driver, which totals up to 800 watts of onboard power. Some of us will have gigged with less powerful PA systems.

Regular readers may know that we often grumble about rear-mounted power switches. Although the main power switch is round the back, Adam has provided a standby switch on the front, along with extensive level and frequency adjustment controls – see the boxout over for more details.

On the wall

The S3X-H also has some interesting →

/// The **design brief for the S3X-H** was to **provide the power** without **sacrificing the accuracy** ///

two 7.5-inch woofers and a tweeter. One woofer handled bass frequencies below 150Hz, with the other filling the gap up to the 1.8kHz crossover point with the tweeter. Adam's design for the S3X-H sees the addition of a dedicated 4.5-inch midrange driver. This allows for a higher crossover frequency with the tweeter, and both the woofers are used

stiffness while minimising weight for fast dynamic response and resonance frequencies that are outside the audible range.

The X-ART tweeter is inextricably linked to Adam monitors. ART stands for Accelerated Ribbon Technology, and it's based on an 'Air Motion Transformer', invented by Dr. Oskar Heil back in 1972.

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→ options. Given the size and midfield capabilities, this speaker could be soffit mounted. To facilitate this, the S3X, along with the S2X, S4X and S5X, can be purchased as a passive unit, to be used with Adam's external amplification system – EA-SX. The amplifiers are housed in a 19-inch rack enclosure with a front-mounted control. An optional 24-bit/192kHz DAC plug-in card is also available for SX models (S2X and higher).

Most monitors these days come with set-up guides in the instructions. Although the S3X-H is very much at the upper end of the monitor market, Adam

listening conditions it's undetectable and occurs only in the 35Hz–45Hz region – give or take a few Hertz – and then only when the test tone is blasted through the box at high levels that wouldn't be tolerable under normal working conditions.

The uninitiated may feel that the S3X-H isn't especially bassy, but don't let the absence of a low-mid hump fool you, because these things really pump out the lows with authority. The bass response reaches way down but sounds even and well controlled, plus it has effortless speed and slam to articulate the transients of kick drums

After taking our time setting up, it was apparent that the S3X-H produces an unusually wide and spacious stereo image

nevertheless obliges. Once we had ensured the tweeters were at ear level and we had constructed our stereo triangle, the key was toeing in the angle of the speakers to achieve rock-solid centre images without congestion or restricted soundstage.

Widescreen

We're mentioning this because after taking our time over setting up, it was immediately apparent that the S3X-H produces an unusually wide and spacious stereo image. Central images are rock-solid, but panned instruments appear over a broader expanse, in order to create a sound that's very much open and uncluttered.

We have noticed port chuffing with Adam monitors before – and the S3X-H does it, too. However, under normal

and bass notes. Things are similarly extended at the other frequency extreme, courtesy of Adam's characteristic folded ribbon tweeter. In our experience, the positive aspects of this design are that you don't have to struggle to hear what's happening with hats, cymbals and so forth – and they don't make your ears tired.

However, one potential pitfall is the way they make it almost too easy to achieve mixes with airy trebles, because those same mixes can sound dull on other speaker systems. To avoid this issue, we ran the S3X-H with tweeter response slightly attenuated, which provided better consistency when switching back and forth with our other reference monitors. Other than that, we felt perfectly happy working with flat settings.

Mid magic

The issue with many monitors that emphasise the top and bottom ends of the frequency spectrum is a slightly hollow and recessed midrange. This probably occurs because the tweeter is expected to go too low and the woofer too high. There's no trace of this midrange issue with the S3X-H, probably because the dedicated midrange driver allows the tweeter and

Alternatives

The Focal SM9 (£2,150 each) has an innovative 'two monitor speakers in one cabinet' approach. One side combines a Beryllium tweeter and 6.5-inch "W" woofer, and on the other there's an 8-inch subwoofer with an 11-inch passive radiator. What's cool is you can switch the woofer and radiator off. Barefoot Sound's MicroMain 45 (£4,999 pair) is a stripped-down, three-way version of the flagship MiniMain 12, with three drivers and ample onboard amplification. The Quested V3110 (£2,292 each) is an active midfield three-way with a dedicated midrange driver.

woofer to do what they do best. During the time we had the S3X-H, we were in the midst of a pile of editing and mixing work. Having the Adams proved fortuitous, because they provided so much information regarding the stereo imaging and that all-important relationship between the kick drum and bass.

As well as presenting mixes in an open and coherent way, the S3X-H allows you to zone in on specific instruments and frequency bands. As you carry out equalisation and compressor adjustments to make mix elements gel and interact, it's easy to hear the effect of small changes and their effect on the whole.

Ultimately, these Adams deliver the forensic detail, imaging accuracy, transient response, wide frequency range and flexibility needed for top-end professional monitoring. They're also commendably quiet, considering the sheer power of the amplifiers, and they can go extremely loud – but, most importantly, they're very enjoyable to listen to. **MT**

MT Verdict

- + Extremely transparent sound
- + Outstanding imaging
- + Ample power
- + Bass depth without boominess
- + Auto standby mode
- + Front-mounted controls
- + Five-year warranty

- Very slight port chuffing
- No auto-standby

You have every right to expect stellar sound given the price, but the S3X-H ticks every box, and it won't disappoint.

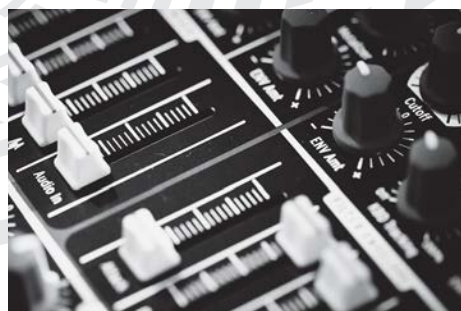
9/10

In use tip

Adam's method of mounting the controls on the front panel is absolutely the best way to do it. The controls include Input Sensitivity, with 'coarse' 4dB steps from -20 to +8dB and fine 0.5dB steps between -1.5 and +2dB. You can adjust the 80Hz response from 0 to +6dB in 1dB steps, and there's low shelving at 150Hz in 1dB steps. As well as high shelving above 6kHz (±4dB in 1dB steps), there's a tweeter gain control, providing ±2dB in 0.5dB steps. The control panel also has two LEDs to indicate clipping and the status of the optional D/A-converter.



```
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/mpx  
/Version 2.1  
  
pwd : /1448013600  
pwd : /1448100000
```



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NATIVE INSTRUMENTS Traktor Kontrol D2

Native Instruments reckons it has just the thing for DJs who want hands-on control of Traktor. **Hollin Jones** puts it to the test

Details

Price £429

Distributor
Native Instruments

Contact
Via website
Web

www.native-instruments.com

System requirements

Mac OS X 10.9 or 10.10 (latest update), Intel Core i5, 4GB RAM, Windows 7 or 8 (latest Service Pack, 32/64-bit), 2.0 GHz Intel Core i5 or equal AMD processor, 4GB RAM

Key Features

- Touch-sensitive controls
- Touch strip
- Full-colour screen
- Access all of Traktor
- Remix and performance section
- Browse and load tracks and effects
- Link two devices over USB
- Flip between Traktor decks
- Generic MIDI mode available

Native Instruments made quite a splash last year with its new flagship S8 Traktor controller, which introduced touch-sensitive controls, full-colour screens and touch strips, as well as containing a full audio interface and mixer. Some of that same technology has now found its way into the D2, a smaller model that is a controller for Traktor rather than an audio device, but retains virtually all the great new controller stuff from the S8. If you compare the two devices, the D2 is basically one of the control sections of the S8, separated off and with some minor differences.

Loading up

The D2 comes with Traktor Pro 2 and shares the look and feel of all NI's recent Traktor hardware. There are extendable feet that can be used to prop it up or raise it to the height of a mixer: since it's a controller, you will need to provide your own mixer. On the back is a power input to connect the bundled PSU, a USB connection to your Mac or PC and two further USB ports that can be used to connect a second D2 and play the two in sync.

The controller is automatically detected by Traktor, and you can make tweaks to its behaviour using the software preferences, such as control sensitivity and touch actions. The large colour screen provides tons of feedback, and as with the S8, uses windows and sections that slide in and

out of the screen, plus a series of buttons to control navigation. The large Browse button can be used to navigate your music library and load tracks, and the Deck Select button enables you to navigate between decks. The screen shows you what's going on – and in surprising detail. NI's familiar colourful waveform display gives you plenty of feedback, and the transport controls at the base – like the other controls – are large and backlit for easy recognition in live performance environments.

Scratch this

The touch pad replaces the CD-style jog wheel you used to get. It can be used for navigation and scratching, and though it may take a little getting used to for turntablists, it works very well. Crucially, it saves a lot of space. Above this is the performance section, with eight pads for the various modes. In Freeze mode, they can be used to play slices of a frozen loop like a sampler; in Flux mode, they let you jump around a track organically; and in Remix mode they are used to trigger slots in remix decks. In this mode, the four faders are also used to control remix deck levels – and this section will also let you work with Stems, though NI's new audio format hadn't been released at the time of writing. You also get capture controls that let you resample running tracks and edit, loading them into remix slots for flexible performance options. At the top of the unit is the effects section –

with touch-sensitive dials, on/off controls and deck assignment buttons. Choosing an effect for each slot is easy, and touch sensitivity means you can simply tap a control to see what's loaded: you don't have to change a setting to make the effect visible. Having hands-on control of effects with visual feedback is great, and unlocks the power of Traktor's processors – which are otherwise much more inert when used onscreen with the mouse.

D-natural choice?

When a developer makes hardware designed to work with its own software, what results is generally a seamless experience, and that's certainly the case here. It's worth noting that the free Controller Editor application enables you to create your own templates for third-party gear, so you're not limited to using Traktor. The tie-in with Traktor is the real heart of the D2, though; and features such as the detailed screen, clever workflow and touch-sensitive controls, as well as Remix Decks and Flux mode, mean you're likely to stick with Traktor, since it's a perfect match.

It's almost a shame that NI hasn't included a basic audio interface, but DJs need a mixer, too, and those generally come with audio I/O, so sticking to controlling Traktor is understandable. Though you can control only one deck at once, hopping between decks is easy and quickly becomes second nature. With tight Traktor integration, great workflow and support for the upcoming Stems format, Traktor DJs will find much to like in the D2. **MT**

MT Verdict

- + Excellent Traktor integration
- + Really does take focus off the computer
- + Effects are far more intuitive to use
- + You can browse music with artwork and other info
- + Scratch and navigate with touch strip
- + Remix and capture, perform on the fly
- + Excellent workflow
- + Switch between decks
- If you want two, you're better off buying an S8
- Controller only, no audio

A fantastic Traktor controller with touch control, great feedback and performance options. Just add your own mixer to get the party started.

9/10

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VIR2 Apollo Cinematic Guitars

Even those who can't play guitar need access to great guitar textures. **Hollin Jones** gets involved with Apollo Cinematic Guitars...



quick way to put together some melodic sequences for any composition.

Last but not least is a collection of Instrument patches that are more conventional sampled guitars and can be played using MIDI. These cover acoustic and electric guitar, bass and sitar sounds, supplied with dry and effected versions. There are up to three velocity layers, five round robins and simple expression controls. Simpler passages work most effectively, since the actions of playing strings and keys are fundamentally different. If you want strummed sounds, those are available in other sections of the instrument. The sampled guitars in the Instruments section sound great, and will be useful if you're inexperienced or not a guitar player at all, but need authentic-sounding guitars in your score.

Stealing the scene

The focus of Apollo Cinematic Guitars is very much on the 'cinematic'. It can do simple guitar reproduction, but its true strengths lie in the more experimental and atmospheric side of things. It's handy, also, that you get a number of different ways of working with sounds, rather than just a long list of patches. Each mode works differently, yet the consistency of the interface means it all stays familiar. These range from conventional pad-style sounds and plucked strings to more unusual swells and the kinds of sonics you can generate with the Ambient Designer section. The controls are easy to follow, the presets very usable and the potential for creating unique soundscapes is vast. This is a great tool for anyone working with scores who wants to bring a new level of atmosphere to their productions. **MT**

Details

Price £280
Distributor
Time and Space
Contact 01837 55200
Web
www.timespace.com
System requirements
MAC: OSX 10.7.3 or later
Intel Core Duo 2.0Ghz or higher
WINDOWS: OS 7 or higher
32- or 64-bit compatible
Dual Core 2.0Ghz or higher

Guitars are capable of much more creative sound design than some people realise, and they feature heavily in many soundtracks, whether in raw or heavily processed forms. If you're not a guitarist or don't have lots of pedals and amps, conventional sample-based guitar instruments can be a bit limiting for sound design work. Apollo Cinematic Guitars is designed for this kind of task. With 22GB of content from industry-leading composers and producers, it runs in the free Kontakt Player or the full version of Kontakt – so can be used in standalone or plug-in mode.

Five ways

The interface is split into five categories, each taking a different approach to sound generation and shaping. The Ambient Designer category is pretty experimental, creating special atmospheric effects. All the sounds emanate from a guitar, but they include things such as slides, white noise and amp buzz. Like most other patches in the instrument, these are mapped across the keyboard and their positions shown using coloured keys. With the six sound slots, you can mix, pan and blend sounds to create your own atmospheres. There's also an effects section, plus a mixer for setting the level of individual notes in a patch.

The Pads section enables you to load and mix two pads, each with a

unique sound. There are configurable effects, including stereo, chorus, rotator, screamer, compressor, delay, reverb and flanger. Some of these have types that can be selected within the effect. There's an amp-style section, too, featuring knobs for controlling tone, drive, bass, brightness and clean signal, as well as an EQ section. The Swells section is a large collection of patches, with things such as strums of high and low versions of major and minor chords for each sound. You can click on a button to see how each patch has been mapped across the keys, and there's an LFO to modulate the sound, with variable controls to introduce a specific amount of movement.

Nicely phrased

Moving on, you come to the Phrase Builder section, which is particularly interesting as it has been put together in conjunction with professional guitarists working in television composition. Many of the most effective scores are also the simplest, but it's vital to get the phrasing and pacing of the parts right. Here, you can skip to that stage by using the pre-created phrases supplied and mapped across the keys. These are fairly simple but effective, and easy to incorporate into wider compositions or use on their own for more dramatic effect. The controls are simple, too: tuning, panning, effects and EQ sections are available. It's a

Key Features

- 24GB sample content
- Five guitar-based categories
- Eight effects options
- Modulation
- Mix and blend sounds
- Experimental as well as conventional sounds
- Compatible with Kontakt Player Free

MT Verdict

- + Excellent for atmospheric and soundscapes
- + Some stunning guitar sounds
- + Easy to use
- + Five sections bring genuine diversity
- + Get ethereal guitar tones without being a player
- + Sound shaping is easy

- Perhaps not useful if you're already a skilled guitarist
- Better for scoring than regular music production

A very solid collection of guitars, expertly tuned for use in cinematic scoring.

8/10



DIGIGRID DiGiGrid IOS

The DiGiGrid IOS combines an eight-in, eight-out audio interface with a SoundGrid DSP server.

Mike Hillier connects to the Grid...

DiGiGrid is a collaborative effort between DiGiCo/Soundtracs and Waves, combining the former's hardware expertise with the latter's software experience to create a networked audio interfacing and processing platform for Mac and PC. The centre-piece of this platform is the DiGiGrid IOS interface, which is one of the most ambitious audio interfaces we've seen in a long time.

The DiGiGrid IOS is a 2U interface, which connects to your Mac or PC via Ethernet cable, and provides eight analogue mic/line inputs and eight outputs, plus two headphone outputs – as well as AES/EBU and S/PDIF digital, Wordclock and MIDI I/O. By using Ethernet, rather than a protocol such as USB, FireWire or Thunderbolt, the DiGiGrid is able to communicate with multiple DAWs simultaneously, over large cable runs. Furthermore, the system is expandable. Need more audio I/O? Add a DiGiGrid IOX for a further 12 mic/line inputs and six analogue outputs, plus an additional four headphone ports. Or add the DiGiGrid IOC for two more mic/line inputs, eight analogue line inputs, eight line outputs and 16 AES/EBU I/O and ADAT I/O, plus two more headphone outputs. Each of these 1U expansion options connects to the IOS over a single Cat 5e/6 cable, with network switching handled internally by the IOS. MADl and Avid DigiLink options are also available.

In addition to this audio and MIDI I/O, the DiGiGrid IOS hosts a SoundGrid DSP server capable of hosting SoundGrid-compatible plug-ins from Waves. The SoundGrid DSP server is

Details

Price **£3,375**

Contact

Sonic Distribution
0845 500 2500

Web

www.digigrid.com

similar to a UAD or Avid HDX system, in that it lets you offload the processing power to a dedicated processor, and requires specific DSP plug-ins to run.

Powering the grid

As an interface, the IOS doesn't pull its punches. Each of the eight analogue inputs can be used as a mic or line input via combo XLR/TRS jacks on the rear. The mic preamps, as well as the headphone amps, are the same as those in the DiGiCo SD7 console. There are no physical controls for any of the mic pres; in fact, the only physical controls are volume knobs on the front

also be used for low-latency monitoring. Oddly, some features appear different in the eMotion ST mixer to the SoundGrid Studio. Preamp gain is a single knob in this software, and you also have an option to invert the signal polarity, a feature which seems oddly missing from the SoundGrid Studio application. Disappointingly, there is no input pad on the mic preamps, although the eMotion Mixer does have a digital trim. But this is of no use if the analogue signal is already clipping on the way in. This absence is doubly curious, considering each of the analogue outputs does have a 10dB pad option.

Getting on the grid

With the eMotion Mixer, you can create custom monitor mixes and apply

As an interface the **IOS doesn't pull its punches**. There are **no physical controls** – only **volume knobs** on the front panel

Key Features

- Eight mic/line XLR/TRS combo inputs
- Eight analogue line TRS or DB25 outputs
- AES/EBU I/O
- S/PDIF I/O
- WordClock I/O
- MIDI I/O
- Ethernet interfacing
- Onboard SoundGrid DSP.

panel for each of the two headphone ports. All control over the IOS mic preamps is done from the SoundGrid Studio software, which must be installed on any computers linked to the IOS. The input section of the software lets you allocate 48V phantom power, and has two knobs for controlling gain, one in 7.5dB steps, and the other providing up to an additional 7dB of fine control. This seems unnecessary in a digital system, on which you should be able to assign any value by typing it in. Alternatively, you can control the preamp from the eMotion ST mixer software, which can

plug-ins using the IOS DSP server. The signal sent to the DAW need not include these plug-ins, so you can – for instance – record a clean, direct signal, while sending a fully processed signal back to the musicians for monitoring – or, of course, you can record the processed signal. In fact, with parallel processing, you could even record the dry and wet signal simultaneously. This is similar to what you can achieve with the UAD Apollo, but with the SoundGrid DSP you can run considerably more plug-ins at once than even one of the largest UAD systems. The downside to this, though, is that the plug-ins are not

Alternatives

Universal Audio's Apollo is proving to be one of the most popular interfaces at present, thanks in no small part to the excellent plug-ins it can host. The HDX system is the other major alternative, although this comes at no small cost. Neither the UA Apollo, nor the Avid HDX can be used by multiple systems simultaneously over Ethernet, but some alternative Ethernet-based hosts do exist – such as the Focusrite RedNet systems

as closely associated with the hardware. On an Apollo, if you use the Neve 1073 preamp, for example, it not only models the saturation of the preamp in software, the hardware preamp impedance changes to match that of a Neve, too. This means your microphone will respond more closely to how it would were it connected to a real Neve 1073. Whilst on the IOS, you can add an instance of the Waves Scheps 73 to get the saturation and EQ qualities, the preamp remains the same. However, while an Apollo can run only two instances of the Neve 1073 per DSP core (for a total of eight on a UAD-2 Quad, for instance), the DiGiGrid IOS can run 64 instances of the Scheps 73.

The DSP isn't confined to the eMotion ST mixer, you can also access

the DSP from inside your DAW using the Waves StudioRack plug-in, which acts as a host for up to eight plug-ins per instance; and there is no limit on the number of instances you can run, other than the DSP available. Add an instance of StudioRack to each track in your mix and you could have a mix running entirely on the IOS DSP platform.

As all the I/O parameters are controlled digitally, it is possible to save any settings as a preset. A drum session, for instance, can be saved, ready to recall next time you record drums, enabling you to get a similar sound. All your mic preamps will be engaged, with appropriate gain, and a basic monitor chain set up for the drummer. When tracking vocals, you can recall the mic preamp setting, plus any EQ, compression and reverbs or delays you want on the monitor path.



The DiGiGrid IOS is designed cleverly, to appeal both to the small home studio user and professional studio owners. Eight analogue inputs with built-in mic preamps is likely to be enough for a home studio, and DSP processing will make this a very appealing interface – while larger studios will benefit from the ethernet networking, and will most likely want to expand their system with the IOC expander, adding analogue I/O without the mic preamps for their existing analogue equipment. **MT**

MT Verdict

- + Built-in DSP to host SoundGrid-compatible plug-ins
- + Ethernet hosting enables expansion and multiple computers
- + Eight DiGiCo mic preamps
- + Near zero-latency monitoring

- No input pads

DiGiGrid IOS is a very exciting interface, offering a powerful DSP engine alongside an impressive I/O selection.

8/10

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NORD Stage 2EX

Excellence
10/10
MusicTech

Nord has updated and added to its top-end Stage range of keyboards. **Andy Jones** checks out the EX HP76...

Details

Kit Stage 2 EX
Manufacturer Nord
Price EX 88 £2,549;
EX HP76 £2,399; EX
Compact £2,199
Distributor
Sound Technology
Contact
+44(0)1462 480000
Web
www.nordkeyboards.
com

As a reviewer, you shouldn't make assumptions before you review products, as – of course – everything you test should be looked at on merit and not influenced by the name on it, no matter how good (or bad) that company's reputation. But that's hard to do when

with a semi-weighted 73-note keyboard; and this all-new EX HP76 'lightweight' 76-note keyboard.

At 12Kg, the HP is not as light as the company's synths, by any means, but 50 per cent lighter than the EX88. As well as the addition of the HP, the range sees improved presets and extra

techniques have been employed for added realism, including Advanced String Resonance, which replicates the interaction of piano strings resonating with one another. Techniques such as this certainly help the overall sound, and each of the pianos, though subtly and not-so-subtly different, is excellent. Suffice to say, the grands are the instantly impressive, majestic and intricate pianos you expect – and you certainly get the most out of them with the HP's keyboard

This is described as having an 'ultra lightweight hammer' action, but really does bring more to the overall performance than you might think. It's very responsive, not spongy, and you find you get a great range from each note. When moving to a 'proper' keyboard such as this, players used to synth-type keyboards (AKA me) and less hammer action can find themselves miss-hitting keys as their hands stretch across them, but I didn't find this. The keys on the HP are responsive and sensitive enough to follow most of my movements, both good and bad. Combine this great feel with the astonishing onboard pianos, add the supplied sustain pedal, and you really can get incredibly detailed and nuanced performances.

It's important to reiterate the sound quality, and also the hands-on control, that the Stage offers. Pianos are brought to life with the sustain pedal, of course, and moving onto the organs, you get a hands-on section dedicated to those sounds with drawbars, effects and percussive controls for detail and flexibility.

Again, the authenticity of the original instrument is paramount, with B3 Tone Wheel and Rotary speakers both modelled to incredible detail. The supplied presets are superb and even more varied than the piano: anything

Describing the sounds on the Stage **as great** is a bit like saying **a Lamborghini looks great**

Key Features

- Three models in range
- Piano section: 1GB sample memory; 5 grand, 7 upright, and 11 electric, plus clavinet, harpsichords
- Synth section: 384MB memory; virtual analogue, wavetable and FM synthesis
- Organ section: B3 Tone-Wheel, vintage 122 Rotary Speaker and Vox and Farfisa simulations
- Connections: 4 x o/p; 1 x h/p; monitor & sustain; rotor, swell & control
- Size (mm, HP76) 1122x127x347

something big and red arrives with the word 'Nord' on it. I've given both the Nord Lead 4 and A1 synths great reviews recently, and now the latest Stage is here. So 10 minutes into playing it and I'm already finding it hard to come up with adjectives, but I'll try not to get too far ahead of myself...

The range

The Stage is designed to be a keyboard player's ultimate instrument, with superbly-created keyboard sounds covering organs, pianos and synths. It also has controls for the main components of each, plus effects and a truly great build that both looks the part and is designed with touring in mind.

The Stage 2 EX range comprises the Stage 2 EX 88, with a fully-weighted 88-note keyboard; the EX Compact,

memory for the Nord Piano Library (now at 1GB).

Describing the sounds on the Stage as 'great' is a bit like saying a Lamborghini 'looks great'. Of course they are – Nord has been at this for years – but here's a quick run-through...

The EX quality

There are three sections – piano, organ and synth – within each keyboard in the range, and the latter two have more detailed controls to access various common and not-so-common parameters, as we shall see.

Within the piano section, you get everything from grands to uprights to vintage, all compatible and upgradeable with the aforementioned Nord Piano Library, a continuously updated, free online resource. Various sampling

Alternatives

For fine piano action and sounds, we've looked at both the Roland RD-800 (10/10, £1,799 MT146) and Yamaha CP4 (9/10, £1,908, MT145). Both lack the Nord's added synth features, but are excellent electric pianos.

from light, jazzy organs to full-on church types. But it's what this section allows you to do with your sounds that counts; the digital drawbars let you change presets and filth them up, as do the effects – all in real time, all hands-on, fun and totally immersive.

Moving on to the third and final section, and it's synth time. Again, they have a control section to themselves, and as a synth head I'm surprised by what you get. Arpeggiator, oscillator, filter and amp envelope sections are all present. The synth presets are maybe a little too obvious to some – big leads, Vangelis strings, trance, etc – but with these hands-on controls, you can really work with them.

The synth engine is based on Nord's virtual analogue (one of the best out there), plus FM and wavetable synthesis, so there's plenty to alter using the existing presets, and with the whole lot compatible with Nord's Sample Library, you can easily upload

new presets from the ever-expanding online library. Great sounds to start with, a great sampling engine, plenty of control over them, and options to replace and upload more.

Finally, in terms of using the Stage, I must draw attention to the effects section, not new to the range but amazing nonetheless. It makes selecting appropriate effects for organ, piano and synth easy, and then allows you to stack two together and add delay, compression and reverb. It's so hands-on, it's almost like a synthesis stage in itself, in that you can take one sound and alter it well beyond recognition.

Any criticisms are very minor. I'd have maybe liked the sounds to be ordered automatically by type (which can also be said of Nord's synths), but that's me being lazy, as this is possible using the Sort facility, so no biggie. Also, I don't want to be playing so many non-keyboard sounds with a keyboard. They still sound good – it just feels odd playing such a great guitar sound with a 76-note semi-weighted keyboard. But this point is rather negated by the fact that you have access to libraries of presets, so you can very much determine your own sonic destiny.

Overall, it's hard to fault the EX HP76. It provides probably the best level of portability vs keyboard quality within the Stage range, so will be a popular choice. As for the range itself, those preset tweaks and extra memories refine an already excellent set of keyboards. Incredible sounds, enough control to dig deep into them and a superb, hands-on effects section. Maybe you can make assumptions before you test certain gear after all. **MT**

MT Verdict

- + Beautiful sound
- + Excellent hands-on sections for synths and organs
- + Brilliant, instant effects
- + Great keyboard action
- + HP76 combines quality keyboard with portability
- + Well laid out
- + Very solid build

- Expensive to some

The HP76 is a great addition to the Stage 2 range, which itself has some fine updates and tweaks. Already a great range, the Stage 2 is still one of, if not the, best out there.

10/10

Workhorse Cube

Manufacturer **Radial**

Price **£319**

Contact **Shure Distribution**

Web **www.shuredistribution.co.uk**

With the continued resurgence in studio hardware, we're finding the need to look at and – in some cases, such as this – revisit more hardware-based accessories, including racks, desks and 500 Series accessories. Enter the Workhorse Cube from Radial...

The 500 Series format has been with us for a while now, its enduring popularity maintained by its convenience and cost. Racks as The Cube make it an even more attractive proposition and bring its compatible devices to the masses via desktop or medium-based studio set-ups.

Radial makes units for 500 Series devices, which can house greater numbers – eight is typical – but The

**Key Features**

- Rack for three 500 Series devices
- Feed feature can run processors in series
- Use patching for parallel processing
- Very sturdy and comes with carry handle

Cube will hold three, and is designed for maximum portability – with a big beefy handle on top – and to go pretty much anywhere, whatever your set-up.

As such, it will sit on the aforementioned desktop, and also within an angled recess to keep it more out of the way but easily within reach.

The main advantage is not just housing your 500 Series gear in a nice compact way (although it does that very nicely, thank you). The Cube also brings

ease of signal flow to the party, by way of a Feed feature.

The rear panel has connections including XLRs for each module, plus ¼-inch TRS connectors for multiple units – which also allow patching and parallel processing. However, the additional Feed function patches them together in series automatically, so that whatever units you have within The Cube all work as one. Very neat.

We're not just talking sturdy box, but also a useful patching interface between your 500 Series gear and whatever you use, so it's not such a pricey solution as it may seem.

When we first looked at the Workhorse, we said it was "an ideal way to bring analogue processing into a desktop environment". That's even more true now, as hardware is returning to studios by way of fashion and necessity, making products such as The Cube more essential than ever. **MT**

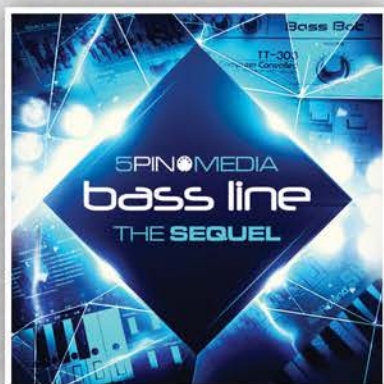
MT Verdict

Sturdy and great for routing your analogue 500 gear and expanding your hardware or software studio.

8/10

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T50RP Mk3

Manufacturer **Fostex**

Price **£115**

Contact **SCV Distribution**

T: +44 (0)3301 222500

E: sales@scvdistribution.co.uk

W: www.scvdistribution.co.uk

Fostex's RP series of headphones recently moved to Mk3, but already has a great reputation in studio circles for close monitoring. The first thing to note is that you may need a headphone amp to drive them at high levels, because a flat frequency response has effectively resulted in a lower sensitivity. What this means is that they are suited for long and accurate mixing sessions. The volume limitation forces sensible listening, while the flat response really doesn't flatter, nor does it lie. What you hear, particularly bass-wise (not so much high-mids), is accurate. They won't suit those after 'loud', but such accuracy at this price is rare. **MT**



Key Features

- Type: Semi-open
- Frequency response: 15Hz-35kHz
- Impedance: 50 ohms
- Max i/p: 3000mW
- Sensitivity: 92dB (at 1kHz, 1mW)
- Weight: 315g

MT Verdict

Great accuracy for those after an unflattering signal for less of a cash outlay.

8/10

AT2020 USBi

Manufacturer **Audio Technica**

Price **£179**

Contact **Audio Technica**

T: 0113 277 1441

E: sales@audio-technica.co.uk

W: eu.audio-technica.com

This is the third incarnation of the AT2020 that we've looked at, and it's fast becoming a 'go-to' mic for all sorts of applications. This 'i' version is extending that list because the 'i' stands for iOS (the clue is in the picture), and it features a Lightning cable on top of a great set of accessories. The mic is one of the best USBs out there – negligible noise, little colouration where you don't want it and a great sparkle, all brought into your mobile devices. We've not been convinced of the iPad's complete studio credentials until some releases for it this year, and this further seals the deal. **MT**

Choice
9/10
MusicTech



Key Features

- Cardioid USB mic
- Up to 24-bit 96kHz recording
- Freq Response: 20Hz to 20kHz
- Dimensions (mm): 162x52
- Accessories: stand mount, protective pouch; tripod desk stand; USB and Lightning cables

MT Verdict

The original scored well, as did the USB version, and so the 'i' completes a hat-trick for AT. The 2020 is a superb mic solution all round...

9/10

Mixer case with laptop stand

Manufacturer **Trojan**

Price **£118.80**

Contact **Studiospares**

T: 020 8208 9930

E: sales@studiospares.com

W: www.studiospares.com

Studiospares has been providing equipment for just about every aspect of studio life for many years now, and the company's extensive catalogue covers everything from the smallest possible audio connector right up to full-on studio acoustic treatments (and literally everything in between).

We'll be running the rule over products from said catalogue over the next few issues, starting here with a product that could do you a few favours in both live and studio environments.

With the boundaries blurring between DJ-ing and production, and the need to branch out into all sorts of areas to get your music out there, you



Value
£££
MusicTech

Key Features

- Rack for 4U (front) plus 12U (top)
- Ideally place a mixer at top and outboard at front
- Very sturdy
- Weight: 19Kg

will probably need to go out on the road at some point – and in doing so may need to take a few choice items of gear with you, including that centre piece of your studio: the computer.

This Mixer Case has all the options covered, with a 4U standard rack at the front, a further 12U on top and a movable surface on which you can house a laptop. What you get is pretty much shown in the picture above, with added screws for racking gear (always good to have). You remove the outer-shell protective side and top panels

(also shown) to reveal the rack spaces and surface. This angled board locks into one position, and it's a shame you don't get more positions to choose from.

At 19Kg, it's heavy, even without gear in it, so wheels would have been a good option – although removing the top, front and back panels reduces the weight. What we really like is that when transporting gear whatever is housed in this will likely be protected from pretty much anything, and the shelf is large enough to hold even the largest of laptops (although it does come undone a little easily).

It's clearly designed for use on the road and will require strong 'roady' arms, but could just as easily find a home in a lot of studios as a permanent gear rack with that additional computer flexibility. For the price, you'll be hard pushed to find more flexible a case for your cash. **MT**

MT Verdict

Heavy but incredibly sturdy and great value. Not only good for the road, but could be a great studio fixture to house gear and laptop.

8/10

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ER•4 microPro

Manufacturer **Etymotic**

Price **£179**

Contact **info@loopmasters.com**

Web **www.etymotic.com**

This kind of money for a pair of in-ear headphones means they must be good, right? Well, Etymotic claims to be at the forefront of the technology, and the company's ER•4pt boasts an incredibly flat response. And if you want to be impressed with noise cancellation – not always something you'd associate with the in-ear type – then these might be worth it. But you do have to be a fan of in-ear headphones, as these need to be inserted deeply into your ear canals, otherwise we found the response lacked definition in the low end and was quite harsh. If you absolutely need the practicality of (very) in-ear 'phones, then these are probably as good as it gets. If not, there are better and less intrusive 'outer' models for the money. **MT**



Key Features

- FR: 20Hz-16kHz
- Impedance (@1kHz): 100ohms
- Sensitivity (@1 kHz) SPL at 0.1v: 90dB
- Maximum Output (SPL): 122dB
- Noise Isolation: 35-42dB

MT Verdict

Fine for in-ear monitoring, but we'd probably favour a good set of on-ear headphones for the money.

7/10

Performance P840

Manufacturer **Ultrasonex**

Price **£159**

Contact **Synthax**

T: +44 (0) 1727 821 870

E: **info@synthax.co.uk**

W: **www.synthax.co.uk**

We're taking a look at a couple of models in the latest Ultrasonex headphone range, starting with the P840. Ultrasonex wanted to design these with maximum comfort, so you'd forget they are on your head, and at just 274g and complete with very large flexible pads, they certainly fit well and feel good. They also score well for cancellation – they don't use an active system, but are well designed to insulate against external noise. They have a little too much focus on the bass in terms of sound, but a good spatial feel and a very pleasing overall quality – great headphones for long sessions. **MT**



Key Features

- FR: 10Hz-25kHz
- Impedance: 32ohms
- Driver size: PET, 40mm
- SPL: 96 dB
- Accessories: 3m straight & 1.2m cable, 6.3mm adaptor, case
- Weight (excluding cord): 274g

MT Verdict

Great comfort and noise isolation make these headphones ideal for long listening and mixing sessions.

8/10

Cakewalk Drum Replacer

Manufacturer **Cakewalk**

Price **Part of SONAR Platinum (\$525)**

Contact **Cakewalk via website**

W: **www.studiospares.com**

Drum replacement is common practice in professional music production, and essentially involves analysing live multitracked drum recordings and then either literally replacing specific drum hits or, more commonly, bolstering existing ones by overlaying extra samples at the same points as the existing snare sounds, for example. To do this manually is insanely time consuming, so Cakewalk has introduced a new Drum Replacer feature as part of its latest update to SONAR Platinum. It's not available separately, since it's integrated into the DAW. It's very nicely built into the workflow, and after choosing a drum channel, preferably a single mic rather than a mixdown for the sake of better detection, you add the effect. The resulting process analyses the signal, then provides you with three additional

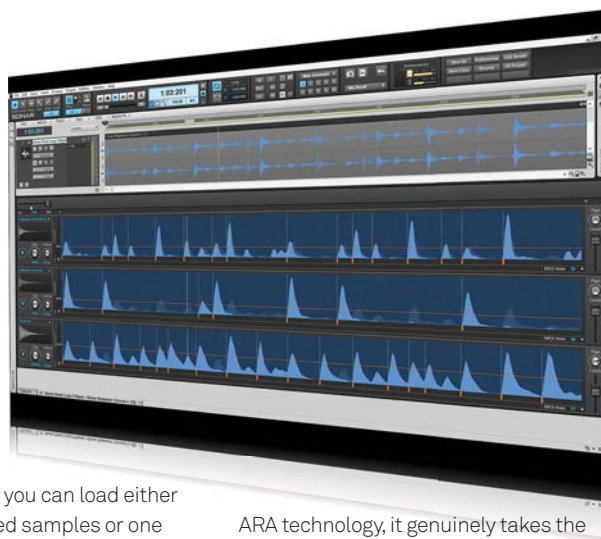
Choice
9/10
MusicTech

Key Features

- ARA technology
- Analyse drum parts and replace hits
- Extract audio to MIDI
- Create rhythms from melodies
- Integrated into SONAR

layers, into which you can load either one of the provided samples or one from your own collection. Each layer can be fine-tuned by setting a filter and an interval control, and there are also individual level and pan controls, plus a master dry/wet blend control. It works very well, and makes it straightforward to beef up your drum parts with surprisingly little effort.

Drum Replacer has other functions, too, such as the ability to extract MIDI information from drum parts for use elsewhere in a project, extract hits from loops and create percussion from a melodic part. Based on Melodyne's



ARA technology, it genuinely takes the hassle out of these processes and has a slick and friendly interface. Since it's not a plug-in, but a part of SONAR itself, there's zero latency and fairly minimal CPU overhead. If you work with multitracked drums a lot, it's a very interesting and useful addition. **MT**

MT Verdict

A clean and efficient way to do drum replacement with a minimum of fuss.

9/10

MusicTechFocus

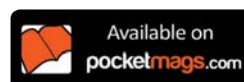
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Six of the best

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Welcome to the **MusicTech Buyer's Guide**, where we round up some of the best products recently reviewed at *MusicTech*. This month, we look at some of the best **hardware emulations** of classic gear we've tested...

BEST Synth range

The Boomstar range

Details

Price £799
Contact
MSL Pro +44(0)207
1180133, email
contact@mslpro.co.uk
Web
www.mslpro.co.uk

The Boomstar range of synths from Studio Electronics has been with us for some time, but a limited production has kept it fairly low in profile. But those in the know – us included, naturally – rave about it, as it comprises some of the best 'new' analogue synths on the market – the fact that each model emulates an iconic classic synth makes it even more desirable. Reviewer Andy Jones said: "The bottom line is that Boomstar is a masterclass in analogue synthesis: unpredictable, rarely off the money, and often incredible. **The Boomstar range has true analogue, classic sounds, combined with an uncompromising nod to the past, and it is all the better for it.**"



Details

Price P49: £1,499
P28: £720
Contact
KMR 0208
445 2446
Web
www.peluso
microphonelab.
com



BEST Mics

Peluso P28 & P49 mics

The Peluso P range takes inspiration from a few classic mics. The P49 was created for people who wanted a mic with the characteristics of a Neumann M49, while the P28 was designed with elements of the Neumann KM54 and the AKG C28. On the former, reviewer Huw Price said: "It gives you all the vintage Neumann flavours you could want, with less need to 'finesse' the tone with equalisation." On the P28, he said: "It always sounds good, and we found it impressive for clear and breathy vocals as well as general instrument recording." Overall, he concluded: "Two more vintage boxes have been ticked. **Somebody has to meet the demand for microphones that the original companies are no longer willing to manufacture, and the Peluso P49 and P28 more than fit the bill.**"

Chandler REDD.47

BEST Beatles

The original REDD.47 preamps were used in the EMI desks made famous for their use in legendary recordings by The Beatles at Abbey Road. Reviewer John Pickford said of this Chandler version: "From a purely sonic point of view, the

REDD.47 has the authentic EMI sound that has been unavailable for almost half a century. **The REDD.47 is an accurate-sounding recreation. For anyone wanting to Get Back to that classic 1960s sound, this is truly a fab (four) product.**"

Details

Price £2,149.99
Contact Nova
020 3589 2530
Web www.
chandlerlimited.
com



→ **BEST** Dance classics

Roland AIRA

The 'secrecy' and consequent hype that surrounded the launch of Roland's AIRA range could never really be matched by the quality of the resulting products – emulations of Roland's classic dance hardware. But the TR-8 and TB-3, emulations of the TR-808 drum machine and TB-303 bassline respectively, are certainly up there with the best emulations of that hardware, and certainly the best emulations that Roland has ever released of its own

products. Reviewer Andy Jones said: "The TB-3 and TR-8 are both innovative and important. They look extremely cool and they sound just, well, damn close. But their importance is that they are priced in exactly the right way to get the next generation of producers off their sorry sofas and actually performing again. **The TR-8 is a great-sounding and great-looking drum machine and the TB-3 sound is on the money, and the extra sounds make this a great buy.**"



Details
Price TR-8 £359
TB-3 £215
Contact
+44(0)1792 702701
Web
www.roland.co.uk



Details
Price £649
Contact Nova
020 3589 2530
Web
www.warmaudio.com

BEST EQ

Warm Audio EQP-WA

With the EQP-WA, Warm Audio has turned its attention to emulating what is arguably the most iconic equaliser of all time: the Pultec EQP-1A. Reviewer John Pickford said: "Don't make the mistake

of thinking that the low price of the EQP-WA equates with low quality. This can hold its own in comparison with any Pultec-styled EQ. **It is a superb product that punches way above its weight. As a creative, musical sonic shaper, it's second to none.**"

“The **TR-8 and TB-3** emulations of the TR-808 drum machine and TB-303 bassline are **the best that Roland has ever released**”

BEST Classic synth

Korg/ARP Odyssey

This is so close to the original that it almost fits in the 'remake' category, but as it's a smaller version and not (truly) built by the original company, we'll settle for one of the best emulations of one of the best classic analogue synths out there. Andy Jones said: "We'd certainly recommend it to those after the

original experience on a budget, and to those who want to audition one of the greatest synths on a smaller scale. **The new ARP Odyssey has the character of the original, and matches it on many levels. It has extra sonics, comes in a**



handy case and is a great buy for classic lovers. But it is 'just' an analogue, so preset hunters beware..."

Details
Price £799
Contact Korg
via website
Web
www.korg.co.uk

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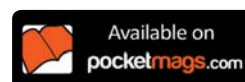
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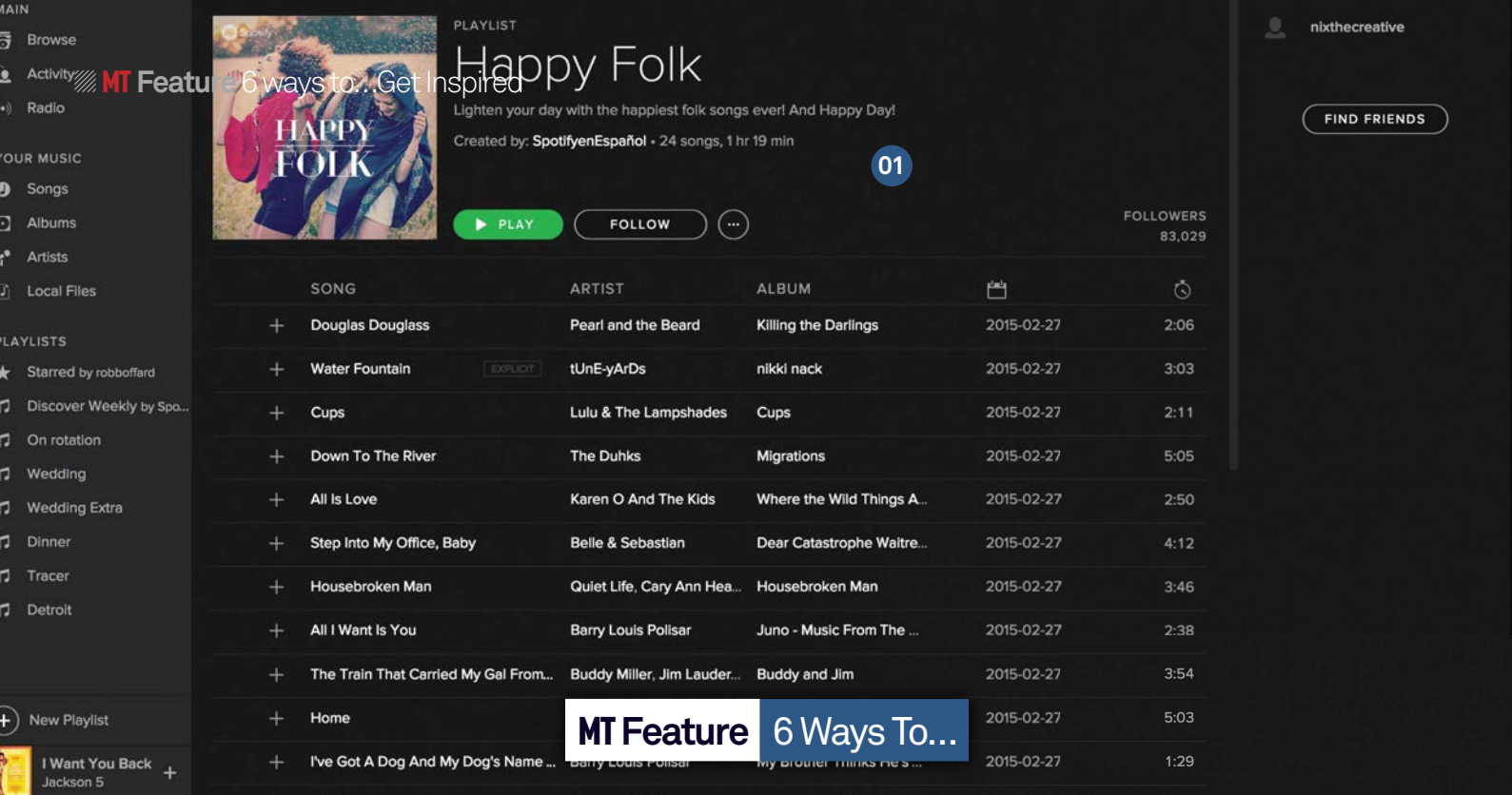
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6 WAYS TO GET INSPIRED

Inspiration is essential to musicians, but it can be an elusive and fickle beast. **Rob Boffard** brings you his six tips to make sure your creative well doesn't run dry...

Writers often talk about their muses. Stephen King's muse, according to him, is an old guy who sits around all day, smoking cigars and doling out nuggets of genius for King to make into stories (judging by King's track record, this must happen quite a lot). While it's not often put as explicitly as that, musicians have muses as well. We might not have a personified imaginary friend, but we do have places from where we get inspiration... except when it refuses to come. Inspiration is a very fickle thing, and it's easy to find yourself without any at a crucial moment. Here are six ways to get that inspiration back.

01 Listen to something else

Seriously, anything. At all. As long as it's not the genre you actually create music in. If you spend your time creating drum 'n' bass, then turn off your regular playlist and bump some hip-hop instead. Or rock. Or classical. Doesn't matter – as long as it's something different to what you normally bump. The science behind this is that your brain needs to switch off to make the right connections. Harvard scientist Dr Shelley Carson calls this 'divergent thinking', and it's about the

mind defocusing from the current project and being allowed to just drift, letting it make the connections it needs to. And on that note...

02 Capture it

You don't get to control when inspiration strikes. It can happen in the shower, at the shops, as you're falling asleep; and if you forget the details, you'll have lost it forever. So you need – absolutely need – something to capture it on. Since the inspiration is musical, that means something that can record sound. With smartphones and their assorted apps, there have never been more ways to jot down an idea. There are dozens available, most of sufficient quality to put down a quick idea, even if it's a hummed melody or beatboxed beat. We like Apple's Garageband (free on iOS), Propellerhead Figure (also free) and FL Studio (paid, on Android). They aren't as fully-featured as most DAWs, but they're fantastic for putting down bare-bones ideas.

03 Get out

Following on from that: sometimes, you need a change of scenery. It sounds so obvious – and that's the problem, because it's a trick that can often be



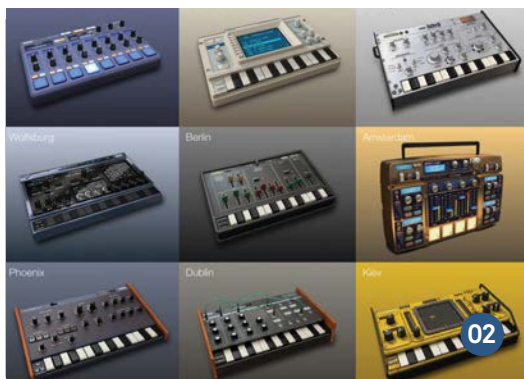
overlooked. Do whatever you have to do: go for a walk, go for a run, go watch a movie, go play an Xbox, go kick around a football. As long as it takes you out of the studio for a bit. It gives you distance from the material, lets your mind wander a little and gives those overworked neurons a break. If you're really clever, you'll find a way to make your brain perform different creative tasks. Video games are perfect – the benefits of playing them have been well documented, and as much as it might not look it, taking down a tricky boss or beating a particular area is a creative act. Yes, we're giving you permission to go gaming. It's work. Totally.

04 Show up

Inspiration doesn't always appear from nowhere like magic. Sometimes, it can come simply because your brain is primed to give it to you. If you can train your



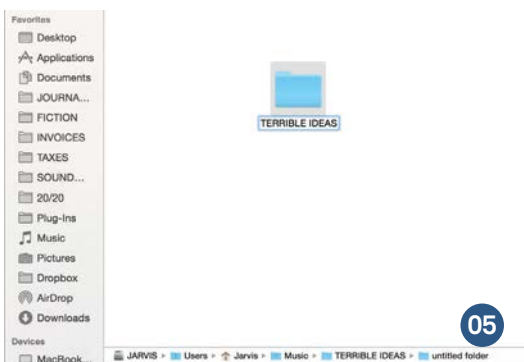
Do **whatever you have to do**: go for a **walk**, **watch** a movie, **play** an Xbox, **kick** around a football...



brain to be in a regular creative space, then you'll find that inspiration comes that much more easily. A simple way to do this is simply to work on music production at the same time each day – difficult if you have a day job/significant other/children, but still very possible. And by doing this, you'll very quickly find that solving difficult problems or getting that much-needed inspiration becomes easy. Your brain actually has a process known as neuroplasticity, referring to the ability to form new connections between neurons – and if you make a habit of taking the time and space to form those connections, you'll be sorted.

05 There are no bad ideas

We've all been there. You start a session bursting with creative energy, and within an hour you have something that sounds like a cat being put through a combine harvester. You hate both it and yourself, and you close without saving, wanting to expunge the thing from your brain. Next time that happens, hold up. Save it. Put it somewhere – hell, put it in a file called Terrible Ideas. When you're stuck for inspiration, months or years down the track, dig into that folder. You'll still probably go "God, what was I thinking?" but you'll have the benefit of distance, and you'll be able to see what made you make those production decisions in the first place.



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06 Collaborate

You know what makes inspiration happen? Other people. Even if you're a total introverted loner, getting together with someone for a pint or on-line can spark ideas – especially if that someone is a fellow producer-friend. Better yet: get together in-studio, and work on a track together. This comes back to the Terrible Ideas folder – forget how it sounds, just enjoy the back-and-forth. You'd be surprised at the great ideas that can come out of sessions like this, and it works even better if there are more than two of you. Another mind can take you in directions you'd never have gone in by yourself. **MT**

Show off your studio

John Seput boasts an incredible amount of tech and guitars, plus that most important of studio items: a random toy (car in this case). Inset: a rack of gear with the ubiquitous blue striplights – we love it...

More of your amazing studio workspaces under the spotlight (or blue striplight). Go to the **MusicTech** Facebook to show off yours...



John Seput

Contact: jseput@yahoo.com

Key components: Focal Twin Be 6 & Yamaha HS50 monitors; Speck X-Sum mixer; Drawmer 1968 ME tube compressor; API A2D & PreSonus ADL 600 preamps; SPL2 monitor controller; 2x Speck ASC-T EQs; Lynx Aurora 8 & AES16e; Korg Triton ProX + various cards; Roland V-Synth XT & XV-5080; Yamaha Motif ES Rack; E-mu Orbit; Access Virus A; Korg MS2000R; Kurzweil K2VX; NI Maschine MK1; Arturia KeyLab 49 & SparkLE; many guitars!

Which DAW and why? I have most of them: DP8, Logic X, Ableton, PT11, HarrisonMixBuss. I started with Performer 1.0 when it was MIDI, and even used to use Opcode Studio Vision. I mainly use DP and Logic for composing and Pro Tools for tracking and editing. I'm trying to get my head around Ableton and would like to start composing in that.

Favourite gear? I have two special pieces of gear: the WashBurn Boogie Street Southern Cross replica, that I got as a birthday present from my

wife, and a tube mono power amp that my father built many years ago.

How do you use your studio?

I work with select projects when I can. The studio is in a bedroom in my house, so when I record bands the whole house gets taken over for isolation. Last year, I recorded a young band called Slow Hollows that are doing really well. We had the drums in the living room, the guitar amps in another bedroom, bass direct, etc. I've done some composing and sound design for games, some industrials, an album for my last band Division Six, and I do some keyboard tracks for another project.

What annoys you about it? Well, I wish I had more space. The room can get cramped, and I think having more depth would help with my mixing.

What is next on your shopping list?

I want to check out the Roland JD-XA, or the Prophet 6 (I used to have a VS and Prophet 10). My current setup is mostly 'in the box',

and I'm missing having a keyboard I can truly interact with. The other piece of gear that interests me is the Allen & Heath GSR24 console. Before I went in the box, I had a GS3000-32 console, and I really miss that sound.

Dream gear? I had a lot of vintage synths in the past... Yamaha DX1, CS-70M, Sequential Prophet 10 and VS, Roland MKS-80, 70, JD-800, JD-990, etc, Oberheim OB-X, Matrix 6, OB-MX, Minimoog D, Waldorf Microwave... I wish I had them all still, but space was an issue. I always wanted the Oberheim Matrix 12 or Expander. I was lucky enough to use both in college, and I always thought they were amazing synths (I do have the Arturia Matrix 12 version).

Any advice? Get the best monitors and headphones you can afford, and make sure your room is set up correctly. Gear acquisition syndrome is real – make sure you have a balance of being a tech vs a composer or player. A lot of time can be spent with software updates.

Spyros L Kolelis

Contact: skolelis@yahoo.gr



Compact, neat and two computers.
Nice work Spyros...

Key studio components: Apple Power Mac G5, MacBook Pro; Mackie, Tapco monitors; Mackie Onyx 1640i mixer; Presonus FireBox and ESI U24XL interfaces; Focusrite Voicemaster Pro preamp; TC-Helicon VoicePro & Line 6 Pod X3 effects; Behringer BX300 amp; Kurzweil K2000 & Roland V-Synth XT synths; NI Kore 2 & Arturia BeatStep controllers; Blue Baby Bottle & AKG D320B mics; AKG K240 DF & K271 MkII headphones; OLP OCC-T Tank, Daion Power Mark XX-B & Ibanez AES guitars

Which DAW do you use and why? Cubase 4 on the desktop and Cubase 8 on the laptop, as I find it very easy to use and it matches the way I work. Also, I sometimes use Logic Pro.

What is your favourite piece of gear? The TC-Helicon VoicePro, not only for its voice editing and effects capabilities, but also for its amazing AD/DA conversion.

How do you use your studio – fun or professionally? I can record instruments per person, but not a band. Professionally, I used to do many productions (like sound design, radio and TV spots) as a freelancer, but that work has gone over the last five years, in conjunction with the

economic crisis in my country. Now, I spend a lot of time making my own music.

Does anything annoy you about your setup? Yes. I would say one thing is the difference between the Mac G5 (OSX 10.4.11) and MacBook Pro (OSX 10.9.5), and the partial incompatibility between the two software platforms, and the problems that then arise with third-party software and hardware manufacturers.

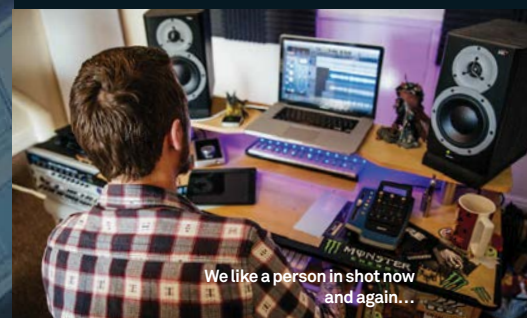
What is next on your shopping list? I would like a control surface to make my mixing workflow easier; maybe an Avid Artist Mix (8-fader control surface) or a Mackie Control Universal Pro. But the word 'next' seems to be very far away.

And what is your dream piece of gear? Apogee's Symphony 64 ThunderBridge is my dream piece of gear, because I would like a better quality of AD/DA sound conversion in my studio.

Do you have any advice on setting up and running a studio? Buy something according to your needs. You should also try to buy the best quality you can. Finally, think twice before you buy.

Gareth Orme

Contact: garethorme@icloud.com



We like a person in shot now and again...

Main components? UAD Apollo Twin Duo; Dynaudio BM5a MK2 monitors; UAD, Slate, Waves, Soundtoys & NI plug-ins; Apogee Duet 2; MOTU 8 Pre; Focusrite Platinum Octopre LE, TrakMaster and Voice Master; Frontier AlphaTrack; M-Audio Axiom Air 32; Akai LPK25; Presonus HP4.

Which DAW? Logic Pro X. The choice when at university was either Logic Pro or Pro Tools. At the time, Logic had better features and was better value for money, whereas Pro Tools did not feature 64-bit architecture.

Favourite gear? UA Apollo Twin Duo – a great little box of tricks. Unison technology is fantastic, and yields good results when it comes to preamp emulation. It also gives me access to the UAD plugin library, which I couldn't work without.

How do you use the studio? I record bands, but mostly it's editing, mixing and mastering. We use it to record the MNFM unsigned podcast show.

Next buy? I'm torn between a Neumann TLM103 mic and the Kemper Profiling Amp. The TLM will probably win – it was my mic of choice at uni – I really like its sound.

Dream piece of kit? A Neve Genesys Black Hybrid 8. It would be a dream to work on a console that has eight channel strips with 1073 mic pres and four-band 88RS EQs, alongside full DAW control and motorised faders. It would be a lot of fun and make my workflow much easier.

Advice? The most important studio component is the room. Spend time to understand acoustics, learn how to make your own treatment to save money and aim to get the flattest room response that you can.

COMPUTER-LESS MUSIC

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Freeware Part 2

Technique

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MTDVD151 4GB+ PC&Mac

Your DVD

Welcome to DVD 151 – great software needn't cost the earth with our freeware round-up. You'll also find orchestral trance MIDI loops, samples, synth programming techniques, and pro mixing tips, plus demos and workshop files...

SOFTWARE//FREE

//67 FREE PLUG-INS!



Size 1.6GB Format MAC, PC, VST, AU
We thought we'd do something rather special for you this month to accompany our massive round-up of free software, and have compiled a collection of 67 high-quality, FREE instruments and effects! There's a huge range of EQs, dynamic processors, creative effects, synths and useful mixing tools from Kuassa, Flux, Plugin Alliance, MeldaProduction, Acon Digital, Klanghelm, Sinevibes, TAL, Voxengo, Blue Cat Audio, Tokyo Dawn Labs, Ignite Amps, A1 Audio, Audio Assault and more. Most items are for both PC and Mac, although some are available on only one platform. See the disc contents file for a full list.

MIDI LOOPS//ROYALTY-FREE & EXCLUSIVE

//ORCHESTRAL TRANCE

equinox sounds

Size 218KB Format MIDI

Equinox Sounds has provided an exclusive pack of 20 Orchestral Trance Construction Kits in MIDI format, with epic, euphoric and uplifting intros. You'll find plenty of melodic MIDI loops, featuring pad chord progressions, strings, synth leads, arps, basslines, piano melodies, plucks and more for creating orchestral trance, euphoric trance and ambient trance – or any genre where lush, epic-sounding progressions are required... Each kit is provided with its component parts in .mid format, so you can edit patterns and try out your own instruments. [Web www.equinoxsounds.com](http://www.equinoxsounds.com)

VIDEO FEATURE //32MINS

//DRUM SYNTHESIS GUIDE

Size 535MB Format MP4, PDF, 24-bit/44.1kHz WAV, Battery, HALion, Kontakt, NN-Xt, SFZ

The Korg MS20 is a sound designer's dream, and can be used to create an array of different instrument sounds. Wave Alchemy and analogue specialist Matt Urmenyi present five videos showing how to program kick drum, snare, tom, cymbal and conga sounds using the Korg MS20 mini synth. There's also a PDF drum synthesis guide on the DVD, plus 483 MS20 synth drum sounds, with accompanying sampler patches for Kontakt, HALion, NN-Xt, Battery and SFZ. [Web www.wavealchemy.com](http://www.wavealchemy.com)



//SOFTWARE

PLUGIN BOUTIQUE
CARBON ELECTRA →
(Windows, Mac OSX)

Carbon Electra is a four-oscillator subtractive synth with informative displays, an editable step-sequencer, six filter types including a vocal filter, integrated distortion, FX and output limiter, and over 600 artist presets. www.pluginboutique.com

DEMO//SOFTWARE



DEMO//SOFTWARE



← ACCUSONUS ERA-D
(Windows, Mac OSX)

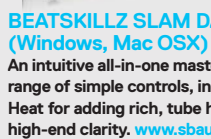
After years of research, Accusonus has released ERA-D; a plug-in designed to effectively remove both noise and reverb from your audio. Both simple and advanced controls are available, alongside a hi-res graphical display. www.accusonus.com



DEMO//SOFTWARE

← SONIC CHARGE ECHOBODE
(Windows, Mac OSX)

A creative effect for metallic bell timbres and more, inspired by the classic Bode Frequency Shifter. Echobode is a delay effect with a frequency shifter placed inside the delay's feedback loop. www.soniccharge.com



BEATSKILLZ SLAM DAWG → DEMO//SOFTWARE
(Windows, Mac OSX)

An intuitive all-in-one mastering and mixing plug-in with a range of simple controls, including Pop and Crush for loudness, Heat for adding rich, tube harmonics, and Air for adding high-end clarity. www.sbaudio.org



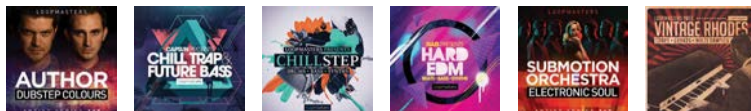
DEMO//SOFTWARE

← AUDIO THING FOG CONVOLVER
(Windows, Mac OSX)

A lightweight convolution plugin that applies the sonic character of an impulse response to another sound in real time. Fog Convolver includes over 250 impulse responses of spaces, equipment, speakers and more. www.audiothing.net

SAMPLE LOOPS//ROYALTY-FREE

//CHILL TRAP, VINTAGE RHODES AND MORE



Size 235MB Format 24-bit/44.1kHz WAV

We've got another eclectic mix of high-quality samples from the good people at Loopmasters for you to use in your tracks. First up, there are epic synth riffs and beats taken from the Chillstep pack, and deep basses and lush pads from Capsun Chill Trap & Future Bass. Next are live trumpet, acoustic drums and keys from Submotion Orchestra Electronic Soul, and deep beautiful riffs taken from Vintage Rhodes. Finally, you'll find blistering basslines and slamming beats from Nais Hard EDM, and organic instruments, percussion and Foley from Author Dubstep Colours.

Web www.loopmasters.com

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 //ORCHESTRAL TRANCE
 //CHILL TRAP, VINTAGE RHODES

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 If your DVD is missing please contact your newsagent

//MIXING WITH FREE PLUG-INS
 //PROGRAMMING SYNTH DRUMS
 //PIB CARBON ELECTRA

SOFTWARE
67 FULL PLUG-INS!

WORKSHOPS
 //PRO TOOLS
 //LOGIC X
 //REASON & LIVE

equinox sounds loopmasters point blank MUSIC SCHOOL wave alchemy

VIDEO TUTORIALS//45 MINS

//MIXING WITH FREE PLUG-INS

Size 480MB Format MP4

Although we like to mix with top-notch, expensive tools where possible, you can still get professional-sounding results just by using an array of high-quality free plug-ins. Point Blank instructor Justin Lyndley takes us through a round-up of his favourite free plug-ins, using PB student Halina Rice's track Krin as an example. Lyndley looks at a large selection of freeware, including compressors, EQs, saturation and distortion plug-ins, stereo tools, limiters, transient processors, reverbs, choruses and more. Be sure to copy all the videos to your HD for the best playback.

Web www.pointblanklondon.com

VIDEO FEATURE//40 MINS

//LOOP+

Size 587MB Format MOV

Loop+ provides a collection of studio videos, starting with producer Jack Sparrow from Author giving some guides on gain staging and prepping the mixdown. Trap and dubstep producer Dan Larsson shares his favourite techniques for creating trap basses, authentic drum kits and trap production pointers. Finally, there are two videos looking at Plugin Boutiques' new Carbon Electra synth, with Rob Jones explaining its features, and producer Multiplier showing how to create a 'bubble' lead sound. Web www.loopmasters.com



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